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Ontario. Legislative Assembly.

SESSIONAL PAPERS

VOL. LI.—PART II.

FIFTH SESSION

OF THE

FOURTEENTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO

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SESSION 1919

TORONTO:
Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1919

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No. 2 — Estimates—Supplementary, for the service of the Province for the year ending 31st October, 1919. Presented to the Legislature, 6th March, 1919. *Printed.* Further Supplementary Estimates. Presented to the Legislature, 7th April, 1919. *Printed.* Estimates for the year ending 31st October, 1920. Presented to the Legislature, 14th April, 1919. *Printed.*

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No. 4 — Report of the Bureau of Mines, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 5 — Report of the Inspector of Division Courts, for the year 1918. Presented to the Legislature, 6th March, 1919. *Printed.*

No. 6 — Report of the Inspector of Legal Offices, for the year 1918. Presented to the Legislature, 20th March, 1919. *Printed.*

No 7 — Report of the Inspector of Registry Offices, for the year 1918. Presented to the Legislature, 20th March, 1919. *Printed.*

No. 8 — Report of the Provincial Municipal Auditor, for the year 1918. Presented to the Legislature, 15th April, 1919. *Printed.*

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No. 9 — Report of the Commissioners for the Queen Victoria Niagara Falls Park, for the year 1918. Presented to the Legislature, 28th February, 1919. *Printed.*

No. 10 — Report of the Inspector of Insurance for the year 1918. Presented to the Legislature, 3rd April, 1919. *Printed.*

No. 11 Report of the Registrar of Friendly Societies. Transactions for the year 1918. Presented to the Legislature, 3rd April, 1919. *Printed.*

No. 12 Financial Statements made by Loan Corporations, Building Societies, Loaning Land Companies and Trust Companies, for the year 1918. Presented to the Legislature, 3rd April, 1919. *Printed.*

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No. 13 Report of the Minister of Public Works of the Province, for the year 1918. Presented to the Legislature, 18th March, 1919. *Printed.*

No. 14 Report of the Game and Fisheries Department, for the year 1918. Presented to the Legislature, 11th April, 1914. *Printed.*

No. 15 Report on Highway Improvement in the Province, for the year 1918. Presented to the Legislature, 11th April, 1919. *Printed.*

No. 16 Report of the Trades and Labour Branch for the year 1918. Presented to the Legislature, 11th April, 1919. *Printed.*

No. 17 Report of the Minister of Education, for the year 1918. Presented to the Legislature, 8th April, 1919. *Printed.*

No. 18 Report of the Board of Governors of the University of Toronto, for the year ending 30th June, 1918. Presented to the Legislature, 26th February, 1919. *Printed.*

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No. 19 Report of the Secretary and Registrar of the Province, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 20 Report upon the Registration of Births, Marriages and Deaths, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 21 Report of the Provincial Board of Health, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 22 Report on the Hospitals for the Insane, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 23 Report on Hospitals for Idiots and Epileptics. *Not presented.*

No. 24 Report on Hospital for Feeble-minded, Orillia, for the year 1918, and Part II. on Feeble-minded in Ontario. Presented to the Legislature, 9th and 15th April, 1919. *Printed.*

No. 25 Report upon the Hospitals and Charities, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

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No. 26 Report upon the Prisons and Reformatories for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 27 Report upon Neglected and Dependent Children, for the year 1918. Presented to the Legislature, 15th April, 1919. *Printed.*

No. 28 Report upon the Operation of the Ontario Temperance Act, for the year 1918. Presented to the Legislature, 11th April, 1919. *Printed.*

No. 29 Report of the Department of Agriculture, for 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 30 Report of the Agricultural College and Agricultural Farm, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 31 Report of the Ontario Veterinary College, for the year 1918. Presented to the Legislature, 16th April, 1919. *Not printed.*

No. 32 Report of the Ontario Agricultural and Experimental Union, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 33 Report of the Stallion Enrolment Board, for the year 1918. Presented to the Legislature, 6th March, 1919. *Printed.*

No. 34 Report of the Ontario Vegetable Growers' Association, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 35 Report of the Corn Growers' Association, for the year 1918. Presented to the Legislature, 16th April, 1919. *Not Printed.*

No. 36 Report of the Entomological Society of Ontario, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 37 Report of the Ontario Bee-Keepers' Association, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 38 Report of the Dairymen's Association of Ontario, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 39 Report of the Live Stock Associations of Ontario, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 40 Report of the Farmers' Institutes of Ontario. *Dropped.*

No. 41 Report of the Women's Institutes of Ontario, for the year 1918. Presented to the Legislature, 6th March, 1919. *Printed.*

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No. 42 Report of the Agricultural Societies of Ontario, for the year 1918. Presented to the Legislature, 6th March, 1919. *Printed.*

No. 43 Report of the Horticultural Societies of Ontario, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 44 Report of the Fruit Growers' Association of Ontario, for the year 1918. Presented to the Legislature, 9th April, 1919. *Printed.*

No. 45 Report of the Horticultural Experiment Station, Vineland Station, Ontario, for the year 1918. Presented to the Legislature, 17th April, 1919.

No. 46 Report of the Statistics and Publications Branch of Department of Agriculture, for the year 1918. Presented to the Legislature, 16th April, 1919. *Printed.*

No. 47 Report of the Bureau of Municipal Affairs for the year 1918. Presented to the Legislature, 17th April, 1919. *Not printed.*

No. 48 Report of the Temiskaming and Northern Ontario Railway, for the year 1918. Presented to the Legislature, 11th April, 1919. *Printed.*

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No. 49 Report of the Hydro-Electric Power Commission, for the year 1918. *Not presented. See No.* 57.

No. 50 Report of the Ontario Railway and Municipal Board, for the year 1918. Presented to the Legislature, 26th March, 1919. *Printed.*

No. 51 Return from the Records of the By-Elections in 1918-19. Presented to the Legislature, 12th March, 1919. *Printed.*

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No. 52 Report of the Archivist of Ontario, for the year 1918. Presented to the Legislature, 3rd April, 1919. *Printed.*

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No. 53 Report on the State of the Legislative Library. Presented to the Legislature, 26th February, 1919. *Not printed.*

No. 54 Statements of Provincial Auditor under Audit Acts. Presented to the Legislature, 26th March, 1919. *Printed.*

No. 55 Report of the Workmen's Compensation Board, up to 31st December, 1918. Presented to the Legislature, 17th April, 1919. *Printed.*

No. 56 Report of the Ontario Insurance Commission. Presented to the Legislature, 26th February, 1919. *Printed.*

No. 57 Report of G. T. Clarkson upon the Accounts of the Hydro-Electric Power Commission of Ontario. Presented to the Legislature, 4th March, 1919. *Printed.*

No. 58 Second Interim Report on Venereal Disease. Presented to the Legislature, 26th February, 1919. *Printed.*

No. 59 Return to an Order of the House of the 13th March, 1918, for a Return of the names of all Coroners, and their addresses in the City of Toronto, also the number of inquests held by each one, each year during the last five years, namely, from January 1st, 1912, until December 31st, 1918, also the amount of money each received, each year during the period named for their services as Coroners. Presented to the Legislature, 26th February, 1919. Mr. *Crawford.* *Not printed.*

No. 60 Return to an Order of the House of the 7th March, 1918, for a Return shewing—1. How many persons who have been convicted and sentenced to imprisonment under the Ontario Temperance Act have been discharged without completing the term for which they were sentenced. 2. How many persons fined under the said Act have had their fines or some portion thereof remitted. Presented to the Legislature, 26th February, 1919. Mr. *Munro.* *Not printed.*

No. 61 Return to an Order of the House of the 18th March, 1918, for a Return shewing—1. What number of accidents have been reported to and dealt with by the Workmen's Compensation Board for accidents caused to workmen engaged in Munition Plants. 2. What amount do the manufacturers of munitions pay in comparison to the amount paid by other manufacturers. 3. Is the amount based on a percentage higher than on manufacturers of a somewhat similar character so as to provide for the possibility

of munition factories ceasing to operate within the near future and yet have large claims left to be provided for. Presented to the Legislature, 26th February, 1919. Mr. *Richardson*. *Not printed.*

No. 62 Return to an Order of the House of the 13th March, 1918, for a Return shewing copies of all communications and correspondence between the Attorney-General, J. H. Rodd, Crown Attorney for the County of Essex, Dr. St. Pierre and H. C. Maisonville of Windsor, Ontario, in the matter of an alleged conspiracy on the part of the said J. H. Rodd against the said St. Pierre and Maisonville in connection with the trouble which occurred at Ford City, Ontario, on or about the eighth day of September, 1917, and which led to the arrest of the said St. Pierre. Presented to the Legislature, 26th February, 1919. Mr. *Racine*. *Not printed.*

No. 63 Return to an Order of the House of the 21st March, 1918, for a Return of the copies of—1. All correspondence between the Minister of Lands, Forests and Mines, or any member, officer or official of the Government, and the firm of F. McGibbon & Sons, Lumber Merchants, Sarnia, or the firm McGibbon Lumber Company, of Penetanguishene, in reference to the renewal of the license granted to the last named company to cut timber on Franklin Island, in Parry Sound. 2. Copy of the original agreement with the McGibbon Lumber Company, of Penetanguishene, in which the said company was given the right to cut pine timber on the said island. 3. Copy of the license and renewals (if any) granted to the said McGibbon Lumber Company. 4. Copy of the agreement made with the license granted to the Hope Lumber Company of Thessalon, Ontario (now owned by White, Gratwich & Mitchell on Garden River), about the same time; and copies of all correspondence between the said Hope Lumber Company or White, Gratwich & Mitchell and the Government or any officer or official thereof in reference to the sale of timber to either company. 5. Copies of the renewals of licenses to the Hope Lumber Company or White, Gratwich & Mitchell (if any). 6. The date when the license to the McGibbon Lumber Company was cancelled. 7. How the money derived from the said license was expended. 8. The number of licenses which have been renewed during the present year in the District of Parry Sound, and in whose names these licenses stand. Presented to the Legislature, 26th February, 1919. Mr. *Proudfoot*. *Not printed.*

No. 64 Copies of Regulations and Orders-in-Council under Section 27 of the Department of Education Act. Presented to the Legislature, 3rd March, 1919. *Not printed.*

No. 65 Report of the Ontario Housing Committee, including standards for inexpensive houses adopted for Ontario with typical plans. Presented to the Legislature, 4th April, 1919. *Printed.*

No. 66 Regulations of the Provincial Board of Health *re* Communicable Diseases approved by His Honour. Presented to the Legislature, 20th March, 1919. *Not printed.*

No. 67 Return to an Order of the House of the 24th March, 1919, for a Return shewing:—1. How much money has been spent in connection with the soldiers' land settlement scheme at Kapuskasing. 2. How many acres have been cleared for crop; and what other improvements have been made, and by whom. 3. How many soldiers availed themselves of the opportunity afforded by the scheme. 4. How many soldiers are still there. 5. At what price *per* acre is this land available. Presented to the Legislature, 3rd April, 1919. Mr. *Bowman (Manitoulin).* *Not printed.*

No. 68 Return to an Order of the House of the 24th March, 1919, for a Return shewing:—1. How many Crown Land Agencies exist in the Districts of Muskoka and Parry Sound. 2. What are the names of the agents and dates of appointment. 3. What is the remuneration paid to each agent. 4. What are the duties of the agents. Presented to the Legislature, 3rd April, 1919. Mr. *Proudfoot.* *Not printed.*

No. 69 Return to an Order of the House of the 7th March, 1919, for a Return shewing if:—1. General Manly Sims had been appointed Agent-General for Ontario, at London, England. If so, at what date. 2. What is his age, and what period of time has he ever spent in Ontario, and in what employment. 3. Is he a native-born Canadian. 4. Is he a British or Canadian Officer. 5. If the former, why was not some qualified Canadian Officer from Ontario appointed to fill the Post. 6. Were any Canadian Officers applicants or recommended for the position, and if so, what were the names of such Officers and on what grounds was each respectively refused. 7. Was the appointment made upon the recommendation of the Civil Service Commissioner of Ontario. 8. What is the salary or remuneration that the Province of Ontario pays to General Sims, and what perquisites, if any, in addition to his salary does he receive. 9. Is the appointment a permanent one, or if not, for what period and on what terms as to time of service. Presented to the Legislature, 3rd April, 1919. Mr. *Dewart.* *Not printed.*

No. 70 Return to an Order of the House of the 24th March, 1919, for a Return shewing:—What are the details of the receipts by Corporations of the Provincial taxes included in the Revenue of the Department of Lands, Forests and Mines for the year end-

ing October 31st, 1918, at page *a*32 at the sum of $863,457.75. Presented to the Legislature, 3rd April, 1919. Mr. *Pinard. Not printed.*

No. 71 Return to an Order of the House of the 4th day of April, 1919, for a Return shewing:—1. What is the total amount of the grants withheld from the Roman Catholic Schools of Ottawa. 2. In what years were such grants withheld. 3. What amount was withheld in each respective year. 4. Has the money for grants withheld from the Roman Catholic Separate Schools of Ottawa been kept in a separate fund. 5. Have these amounts been revoted in any succeeding session of the Legislature. Presented to the Legislature, 10th April, 1919. Mr. *Pinard. Not printed.*

No. 72 Report of the Civil Service Commissioner, 1918. Presented to the Legislature, 10th April, 1919. *Printed.*

No. 73 Return to an Order of the House of the 24th March, 1919, for a Return of:—1. Copies of all documents covering the original sale to one J. J. Carrick, of the City of Port Arthur, of certain pulpwood limits in the Pic River and Black Sturgeon River Districts of Thunder Bay. 2. Copies of all agreements connected therewith or supplementary thereto. 3. Copies of all letters and telegrams which passed between the Government or any member or official thereof and the said Carrick or any one on his behalf, in reference to the said limits.—Presented to the Legislature, 15th April, 1919. Mr. *Proudfoot. Not printed.*

No. 74 Return to an Order of the House of the 4th March, 1919, for a Return shewing what building it is proposed to cover by insurance out of the following items appearing in the Supplementary Estimates for the fiscal year ending October 31st, 1919:—(*a*) $4,000.00, Item No. 1, Vote No. 187; (*b*) $1,000.00, Item No. 9, Vote No. 194. Presented to the Legislature, 15th April, 1919. Mr. *Pinard. Not printed.*

No. 75 Report of the Bureau of Municipal Affairs *re* Housing, including Acts, Rules and Regulations, Housing Standards, Provisions and Forms for 1919. Presented to the Legislature, 15th April, 1919. *Not printed.*

No. 76 Return to an Order of the House of the 28th March, 1919, for a Return shewing all correspondence between any Department of the Government or Minister, or Official, and the British America Nickel Corporation, Limited, or any Official or Director thereof or person representing the said Company, regarding the refining of Nickel or other Minerals by the said Company, the establishment of a Refinery or other works and the location of the same in Ontario, and as to the location of the Refinery where

	it is now being erected in the Province of Quebec, and all documents relating in any way thereto. Presented to the Legislature, 15th April, 1919. Mr. *Dewart*. *Not printed.*
No. 77	Copies of Orders-in-Council designating the Convalescent Home for Women, Ottawa, and the Salvation Army Women's Hospital, Bloor Street East, Toronto, as Hospitals to which aid may be granted pursuant to Section 14 of The Hospitals and Charities Institutions Act. Cap. 300. R.S.O., 1914. Presented to the Legislature, 17th April, 1919. *Not printed.*
No. 78	Report of the Soldiers' Aid Commission. Presented to the Legislature, 17th April, 1919. *Not printed.*

REPORT

OF THE

Minister of Lands, Forests and Mines

OF THE

PROVINCE OF ONTARIO

For the Year Ending 31st October

1919

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:

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1920

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Venetia Islands, Lake Rosseau.

Report of the Minister of Lands, Forests and Mines of the Province of Ontario

For the Year Ending 31st October, 1919

To His Honour the Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

I have the honour to submit for the information of your Honour and the Legislative Assembly a report for the fiscal year ending 31st October, 1919, of the management of the Crown Lands of the Province.

Clergy Lands.

The collection on account of Clergy Lands was $487.10. No land was disposed of during the year. (See Appendix No. 3, page 24.)

Common School Lands.

The area of these lands sold during the year was 72.33 acres for $109.87. The collection on account of these and former sales was $1,984.02. (See Appendix No. 3, page 24.)

Grammar School Lands.

The collection on account of former sales was $627.54. (See Appendix No. 3, page 24.)

University Lands.

The area of these lands sold during the year was 119.50 acres for $59.75. The collection on account of these and former sales was $2,064.40. (See Appendix No. 3, page 24.)

Crown Lands.

There was sold during the year for agricultural and town site areas 49,704.32 acres for $48,119.74. The collection on account of these and former sales was $79,841.77. There was sold for mining purposes 10,600.28 acres for $28,350.01. There was collected on account of these and former sales $28,510.54.

There was leased for mining purposes 2,137.21 acres for $1,562.99. There was collected on account of these leases and those of former years $14,270.78. There was leased of Crown Lands an area of 8,820.41 acres for $2,164.25. There was collected on account of these and the leases of former years $66,024.15.

The total area of Crown lands disposed of by sale and lease during the year was 71,454.05 acres for a value of $80,366.61, as compared with 103,701.59 acres sold and leased in 1917 for $80,345.43. The total collection on account of the sales, leases, etc., was $199,810.90. (See Appendix No. 3, page 24.)

Sales.

Throughout the fiscal year ending 31st October, 1919, more inquiries were received and answered than during any corresponding period since the outbreak of

Field peas, Boulter Ranch, Nipissing District.

the Great War. While all these did not result in actual sales it is gratifying to observe that more purchasers acquired land during the past than the previous year although the acreage involved is approximately the same. Appendix No. 15 is a compilation of all land sales and grants other than those occurring in Free Grant Territory and from this may be ascertained in detail the transactions according to townships, agencies and districts. It was necessary to cancel 208 sales for failure of the purchasers to meet the prescribed conditions of settlement while 19 sales were restored for just cause and 312 settlers, for various reasons, were permitted to assign their interests to bona fide tillers of the soil.

Settlers to the number of 539 proved up and acquired their patents for an area of 55,000 acres against approximately 400 and an acreage of 36,000 for the year 1918. An evidence of the desire of the settlers to maintain their payments in respect of land purchases is found in the fact that the collections on account of new and old sales exceeded last year's by nearly $30,000, although in a number of cases where returned soldiers presented their credentials the arrears due the Crown were remitted. Several old Clergy and Common School land sales were paid in full and the proper claimants secured titles.

The unsolved problems arising out of the war with the general state of unrest and the somewhat restricted field from which to draw desirable settlers tend to withhold for the time being a rush to the northern sections of the Province. The economic strain of modern life conduces to a desire to a hurried investment and a quick and extensive return from the land rather than to an ambition to hew out a home by steady and persistent pioneer methods.

Flock going to pasture; Boulter Ranch, Nipissing District.

With a gradual return, however, to more stable conditions and to a more general realization of the necessity of putting in labour on the undeveloped lands of the Crown to secure adequate crop results and, within a measurable degree of success, a reasonable equilibrium between production and consumption, there shall be an impetus to the "back to the land" movement. Any predictions apart from this as respects land purchases and active settlement in Northern Ontario would be unjustifiable in the face of problematical immigration conditions and the financial aid and general appeal held out to returned men to resume the many abandoned cleared farms in the older sections of the Province.

Free Grants.

There were 516 settlers who took up free homesteads within the year, or over 150 more than the previous year. The area thus located comprised 72,420 acres. Patents for such homesteads issued to 431 while assignments numbering 253

covering an area of 34,123 acres were duly approved. The privilege of buying an additional area adjacent to a homestead for pasturing fuel or cropping purposes was exercised by 140 locatees.

Although in Appendix No. 14 practically all the Free Grant townships appear for the purposes of maintaining a detailed reference according to agencies and districts a perusal of same will show that in some no locations were effected and in others but few. This is due to the fact that many of the areas involved have been in the market for a long period and all the desirable land therein has been acquired.

Checking up delinquents with a view to ascertaining the extent of their settlement requirements resulted in the cancellation of 425 persons whose locations in a number of instances had been allowed years ago.

The remarks under the previous heading "Sales" in respect of the future of settlement apply with equal force to Free Homesteading.

A list of the islands sold in Free Grant territory appears in Appendix 14.

Patents, Leases, Licenses.

Instruments to the number of 1,394 were issued through the Patents Office, an increase of 43 over the year ending 31st October, 1918.

Of the total 850 covered settlers' patents, 68 veteran grants and 377 mining grants and leases. The remaining 190 consisted of Crown Leases, Licenses of Occupation, Pine Patents and Orders-in-Council.

In addition to the entry of all such documents the Patents Office is required to prepare references, make daily searches respecting old grants, record new ones and to regularly mark and maintain the office maps showing all transactions as indicated in the instruments issued in accordance with Appendix 8.

Military Grants.

Under the Veteran Land Act, 1 Edward VII, Cap. 6, and amendments thereto, there have been issued 13,998 certificates, and although the time for receiving applications for these grants expired on the 30th September, 1908, there are still letters being received from men who were entitled to this grant, but claim that they have only now become aware of the fact. These applications, therefore, could not now be accepted and no forms of applications have been sent out.

During the past year there have been located 45 of these certificates covering 7,189 acres in the townships open for veterans, making in all a total of 8,329 certificates thus located.

In six cases the certificates have been surrendered and applied in payment of lands purchased from the Crown, covering in all 960 acres, making a total of 791 that have thus been applied.

There were three certificates surrendered to the Crown for the $50.00 commutation money, making a total of 3,263 certificates surrendered in this manner.

During the year there have been issued 34 patents for lands located by veterans, and in all 7,371 have thus been disposed of.

The total number of certificates that have, therefore, been disposed of is 12,383, leaving 1,615 that are still outstanding.

During the year 16 veteran locations, covering 2,549 acres, were cancelled for the non-performance of the settlement duties to which they became subject on account of being assigned before patent was issued.

Under the Act 1 Edward VII, Cap. 6, and amendments thereto covering these grants it is necessary for all locatees of the lands granted under this Act to apply for their patents for such lands before ten years have expired from the date of location. If this application for patent is not made within ten years then the land comes under the settlement regulations, and unless the settlement duties are proceeded with, the locations are liable to cancellation. Previous to the expiration of the ten years after location, the Department has sent a notice to each veteran, who should apply for his patent stating this fact, and in this manner has saved many of the locations from becoming subject to the settlement duties. See Appendix No. 11.

Financial Assistance to Settlers.

The Settlers' Loan Commissioner reports having received up to October 31st, 1919, a total of 2,001 applications for loans, amounting in all to $776,790.00. In all, 1,414 loans have been made to settlers amounting to $442,256.00. In addition, an advance of $12,000 was made to the Sudbury Co-Operative Creamery Company, to which reference was made in the annual report for the previous year.

Requests for loans are given most careful consideration, but advances are not made except in cases where the security offered is sufficient to afford the Department every reasonable protection.

It is worthy of note that nearly 90 per cent. of accrued interest payments have been taken care of by borrowers, and further that payments on principal have exceeded the amounts due on account—numerous loans having been paid off in advance of date of maturity.

The settlers of Northern Ontario, generally speaking, appear to appreciate fully the advantages afforded by the Settlers' Loan Commissioner, and the amounts which have been advanced, undoubtedly, have greatly assisted settlement in the north, and have also considerably increased production along agricultural lines.

Memorandum Re Mineral Industry in Ontario for 1919.

The chief metallic products of Ontario are nickel, copper, gold and silver. The effect of the great war was to stimulate the production of three of these metals, namely, nickel, copper and silver, while on gold it had the opposite effect.

Nickel and copper are essentials for modern warfare, and while the war continued their production rose to the maximum capacity of the mines. Of nickel the total output in 1918 was 46,072 tons, having a value of $27,840,422. The signing of the armistice on the 11th November, 1918, found the allied governments and munition contractors stocked with nickel and the demand at once ceased. Curtailment of operations at the mines and smelters immediately followed, and for the larger part of 1919, only a minimum amount of work was done, awaiting the absorption of the surplus nickel by peace and reconstruction industries. Towards the end of the year demand revived, and the prospect is for an early resumption on a pre-war scale. The total output in 1919 was about one-half that of the previous year, and the value fell to about $12,000,000. There was a similar reduction in the output of copper, say from 23,000 tons to about half the quantity, the value being about $3,500,000.

The extraordinary demand for silver, and the falling off of the output in all silver-producing countries, had a marked effect on the Cobalt silver mines. This

demand continued and was intensified during 1919. With silver at $1.25 and $1.30 per ounce, waste dumps became valuable, and abandoned properties were reworked. Long continued and steady production by the established mines has now told heavily on the reserves of ores at Cobalt. Labour strikes brought about a stoppage of the mines for nearly two months. When the statistics of production are compiled, they will doubtless show a heavy falling off in the quantity of silver produced as compared with 1918. The increased price of the metal will assist the figures of aggregate value, but these too will show a decline.

In the case of gold, the steadily mounting cost of supplies and labour narrowed the margin for profits while the war lasted. There has been no relaxation in these respects even since, but with the return of the skilled miners the efficiency of labour has markedly risen. The gold output for 1919 will be about $10,000,000, or an increase of $1,800,000 over 1918. In fact, the outlook of gold mining in Northern Ontario is decidedly good. The Hollinger mine at Porcupine, is one of the largest gold mines of the world, and is now producing at the rate of about $8,000,000 per annum. Ore reserves at the Hollinger and McIntyre mines are being enlarged, and the camp is on a solid basis. The position of Kirkland Lake, too, has been improved. The east-and-west vein system running through the bed of Kirkland Lake and lying to the south of it, contains high gold values, and a group of important mines is being established upon it. The Lake Shore, Wright-Hargreaves, Kirkland Lake, Teck-Hughes, and others are in this neighbourhood. Tough-Oakes and Associated Gold Mines lie further to the east. The newer gold camps, including Boston Creek, Bourkes, Fort Matachewan and others, are passing through the development stage. At Larder Lake there is also considerable activity. Gold finds have been made near Schreiber on the main line of the C.P.R. and south of Dryden station. It can be truthfully said that in the pre-Cambrian formations of Northern Ontario the gold prospector will find as promising a scene for his labours as anywhere else in the world.

Other minerals are being sought for in territory north of the Transcontinental railway. Lignite, iron ore, gypsum and refractory clay are known to exist, and these deposits are now being investigated. The limestone formations underlying the coastal slope by no means preclude the existence of oil, gas or salt. Distances are great and the expense of moving machinery is heavy, and it is proposed by some to call in the use of the seaplane to assist in exploration.

The mineral industry in older Ontario is largely a non-metallic one, except in Hastings county and the lead deposits on the Ottawa river. The output of building materials has been kept down by the high level to which prices have risen, and until there is a reduction in values, or what is more likely to happen, until the new level becomes a normal one, capital will not flow freely into the building trade. Petroleum shows an increase in production over 1918; natural gas a decline, due both to the failing supply and to the governmental efforts at restriction to domestic uses. The remaining materials on the long list of non-metallic products, continue to be produced in about the usual quantities, but in most cases in larger values.

Collections.

The total revenue of the Department from all sources was $2,755,736.28. Of this, $79,841.77 came from Agricultural lands and Town sites; Mining lands, $28,510.54; Mining and Crown Leases, $80,294.93; Miners' licenses, permits and recording fees, $63,962.90; Supplementary Revenue tax, $626,321.20. From Woods

and Forests the revenue was $1,803,081.36, made up of the following items, Bonus, $872,598.69; Timber dues, $662,928.30; Ground rent, $87,682.52; Transfer fees, $5,205.00; Fire protection charge, $174,666.85. (See Appendix No. 4, page 25.)

Disbursements.

The total expenditure of the Department for ordinary service was $1,536,766,-93. Some of the principal items were: Crown Land agents' salaries and disbursements, $18,915.79; homestead inspectors, $16,934.76; Crown timber agents, $31,580.81; Ottawa agency, $3,240.55; fire ranging, $528,734.64; forest ranging and estimation of timber, $140,338.50; forest reserves, $6,140.25; salaries, wages and expenses of men, re reforestation, $6,923.56; investigation in reforestation, $5,465.17; investigation of forest tree diseases, $5,651.77; surveys, $128,823.25; colonization roads, $390,621.54; printing and advertising, $21,351.13; emigration work in Great Britain, $34,052.07; grant to Brigadier-General R. F. M. Sims, $5,000.00; purchase and distribution of films, $4,543.95; mines and mining, $17,308.29; mining recorders, $24,681.62; Provincial assay, $6,075.21; natural gas advisory board, $6,460.13; contingencies, lands and forests, $31,302.37; Bureau of Mines, $12,731.91; forestry, $1,425.29; colonization, $2,100.25; colonization roads, $4,130.64.

A further sum of $177,973.35 was expended under the direction of the Department, distributed as follows: Algonquin Provincial Park, $31,223.76; Quetico Provincial Park, $11,291.69; Veterans' Commutation, $150.00; Royal Nickel Commission, $46.85; legal investigations, $2,171.50; fuel investigation, $118,089.55; fuel problem, $15,000.00. (See Appendices Nos. 6 and 7.)

Woods and Forests.

The accrued revenue from Woods and Forests for the year ending October 31st, 1919, amounted to $2,278,558.66, which exceeded that of the previous year by $642,874.33.

The revenue collected during the same period totalled $1,803,081.36, or $46,996.11 in excess of the amount collected during the year ending October 31st, 1918.

The production of pine timber during the season of 1918-19 amounted to over one hundred and ninety-two million feet board measure, as against approximately two hundred and eighteen million feet for the previous season, representing a decrease of, in round numbers, twenty-six million feet. The production of other timber amounted to somewhat over thirty-eight million feet, as against twenty-nine million feet for the previous season.

Pulpwood cut from Crown lands for the season 1918-19 amounted to 320,195 cords as against 338,563 cords for the previous season.

A very large increase will be noted in the number of railway ties removed from Crown lands. The cut for the current season amounted to 5,140,654 ties as against 2,094,099 ties cut during the season of 1917-18. The price of railway ties continues to advance.

No pulpwood concessions were disposed of during the current year.

It might also be noted that pulpwood amounting to 414,977 cords was removed from settlers' lands, also 1,064,675 railway ties.

Lands Under License.

The area under license at the close of the fiscal year was 16,231 square miles, a decrease of 651 square miles from the previous year.

Summary of Revenue from Woods and Forests.

Bonus	$872,598 69
Timber Dues	662,928 30
Ground Rent	87,682 52
Transfer Fees	5,205 00
Fire Protection	174,666 85
	$1,803,081 36

Cullers' Examination.

Two examinations were held during the year, one at North Bay and one at Kenora. Four candidates succeeded in passing the examination and were duly granted certificates authorizing them to act as Cullers. For names of Cullers who passed at these examinations, see page 41, Appendix 12. For complete list of licensed Cullers see Minister's Reports for 1917 and for 1918.

Fire Protection.

The season of 1919 was the third season during which the Forestry Branch was charged with the work relating to the Forest Fire Prevention Act of 1917. In submitting his report for 1919, the Provincial Forester suggests that consideration be given to legislation which will provide for compulsory fire fighting by local labour in cases of necessity. Attention is also drawn to the advisability of amending the Forest Fires Prevention Act to provide more effective penalties for violation of the permit regulations. Such violations of the permit regulations are punishable at the present time by fine only.

During the season of 1919, six thousand six hundred and thirty-five fire permits were issued covering a total of 26,790 acres, as against nine thousand five hundred and ninety permits for the season of 1918, covering 39,633 acres. Twenty-three persons were prosecuted for infractions of the permit regulations and convictions were secured in twenty cases. As has been intimated above, the time seems opportune for consideration of the insertion in the Act of provisions for more drastic penalties in cases of flagrant offences.

The territory protected was divided into thirty ranger districts. The field force consisted of one Superintendent, four Inspectors, thirty Chief Rangers, forty-nine Deputy Chief Rangers, with a maximum of one thousand and fourteen rangers.

Forest Fires.

During the early part of the fire season the weather was comparatively wet, and it was accordingly possible to keep the ranging staff at a minimum. In the month of May the weather became very dry, and a period of three months of abnormally dry weather conditions followed. Fires became numerous and assumed large proportions.

Difficulty was first encountered in the Clay Belt District. The permit system undoubtedly saved the situation from becoming more serious than was actually the case. Clearing fires, however, in numerous cases got out of control, and

resulted in the destruction of considerable property but fortunately there was no loss of life.

The most serious loss and damage occurred in the central inspectorate, embracing, roughly, the middle portion of the white pine belt in Ontario. It does not appear that the loss of standing timber was the most serious factor, but rather the destruction of young growth. In the strip of country lying between Lake Nipissing and Sault Ste. Marie, lying south of the Mississauga Forest Reserve it appears that approximately 522,000 acres were burned over. The western and southern inspectorates also suffered from severe fires.

The protracted period of dry weather, in some districts, the scarcity of water and the extreme difficulty in securing competent labour, all added to the difficulties of the fire ranging staff and added to the losses occasioned.

Measures will have to be taken having in view the more thorough protection of cut-over lands, and it would seem the time is opportune to consider the more general adoption of slash disposal regulations.

The total area reported as being burned over exceeded 922,000 acres.

It is found once again that the various railways were the most fruitful causes of fires. Reports indicate that 48 per cent. of all fires reported originated from this source. 8.2 per cent. of all fires reported were attributed to settlers, 11.2 per cent. to campers, the remainder from various causes—in numerous cases unknown.

Improvement Work.

Improvement work was necessarily curtailed during the season of 1919, owing to the serious fire situation and to the shortage of labour.

Equipment.

Steps were taken to have all equipment such as canoes, railway velocipedes, etc., painted the same colour, and after a uniform pattern. All equipment was stencilled, or branded, and the main articles of equipment were numbered on a definite system, to assist in the keeping of proper records, and to determine the life of various goods supplied by different manufacturers. Considerable new equipment in the shape of canoes, power boats, tents, etc., was added.

Large provision is required for the proper storage of all equipment, and accordingly, a number of store-houses have been erected notwithstanding which it has been found necessary to rent considerable warehouse space.

The educational campaign in the way of instructing the public as to the prevention of forest fires was continued. Numerous fire signs were posted, and in addition, quantities of pencils, calendars and rulers were sent out in quarters where it was calculated that the best results would be obtained.

Locomotive Inspections.

One thousand and twelve locomotive inspections were made at an average cost of $2.07 per inspection. Two hundred and twenty-one inspections showed defects.

Forestry.

Particular attention is directed to the section of the Provincial Forester's report dealing with problems of reforestation. Valuable work is being done at the Provincial Forest Station in Norfolk County. About 40,000 trees were sent

out during the season to private planters. The work at the station has proceeded under difficulties for the past few years owing to difficulty in securing reliable seed. It is anticipated that there should be no great difficulty in placing this work on a more satisfactory basis in the near future.

Tree Diseases.

Dr. J. H. Faull continued his investigations, and has submitted a very valuable report which will be found embodied in the report of the Provincial Forester. A complete summary of the work of the Forestry Branch will be found in Appendix 40, page 105.

CROWN SURVEYS.

Instructions were given to perform the following surveys of Crown lands during the year and the work was carried out as shown in the latter portion of this report.

These surveys comprise:—

(1) Three hundred and thirty miles of meridian and base lines including parts of the boundary lines between Rainy River, Kenora and Thunder Bay Districts.

(2) Eight hundred and forty miles of township outlines in the Districts of Thunder Bay, Algoma, Timiskaming and Sudbury.

(3) Subdivision into lots and concessions of the Township of Fowler and parts of the Townships of Devon, Hanlan, Casgrain and Xansen.

(4) Traverse survey of lakes west of Lake Timagami in the Timagami Forest Reserve, Districts of Nipissing and Sudbury.

Dog Lake, Long Lake and Upper Shebandowan Lake, in the District of Thunder Bay.

Opazatika and Dog Lake, in the District of Algoma.

Missinaibi Lake, Pishkanogama Lake, Horwood Lake and Sahkatawichtah Lake, in the District of Sudbury.

Charleston Lake in the County of Leeds.

(5) Retracing of part of the boundary of the Algonquin Provincial Park, District of Nipissing.

(6) Survey of timber limit lines in the Township of Wigle, District of Sudbury, and in territory east of the Township of Askin, in the District of Nipissing.

(7) Close traverse of shores and islands in Windy Lake, Townships of Dowling and Cascaden, District of Sudbury, including soundings and the fixing of special lines of reference for mining purposes.

Twenty-five survey parties were engaged on this work and most of the surveyors report a very difficult and trying season's work due to labour and weather conditions.

The reports received from the Inspector of Surveys show that the work in general has been well performed.

MUNICIPAL SURVEYS.

Petitions for Municipal surveys were received from the municipalities of the Townships of Williamsburgh, McNab and Southwold, for the survey of certain original road allowances within the said townships, and these petitions were acted

upon as provided for under R.S.O. 1914, Cap. 166, sections 13 and 14. In addition to the above the survey performed in the Township of Goulbourn on petition of the municipality was confirmed.

Detailed description of the several surveys performed under instructions from this Department will be found in Appendices 20 to 35, inclusive.

Colonization Roads.

On March 1st, 1919, the Colonization Roads Branch of the Public Works Department was transferred to the Department of Lands, Forests and Mines. A report as to the work of the Colonization Roads Branch will be found in Appendix 42, page 126.

Northern Development Branch.

The work of the Northern Development Branch was continued as in the past under the direction of Mr. J. F. Whitson and Mr. C. H. Fullerton. The work on the Sault-Sudbury Trunk Road, together with the work on the roads on St. Joseph's Island was placed under the direction of Mr. John L. Lang, of Sault Ste. Marie. It is expected that the Sault-Sudbury road will be completed during 1920. Every endeavour is being made to keep existing portions of this road in a proper state of repair. The report of the Northern Development Branch is found in Appendix 43, page 163.

G. H. Ferguson,

Minister.

Department of Lands, Forests and Mines,
Toronto, October 31st, 1919.

APPENDICES

Appendix No. 1.

Return of Officers and Clerks of the Department of Lands, Forests and Mines for the year ending October 31st, 1919.

Branch.	Name.	Designation.	When Appointed.	Salary per annum.	Remarks.
	Hon. G. H. Ferguson	Minister	1914, Dec. 22	$6,000 00	
	Albert Grigg	Deputy Minister	1915, Oct. 18	4,400 00	
	C. C. Hele	Minister's Secretary and Secretary to Department	1911, Oct. 19	2,700 00	
	H. M. Robbins	Assistant to Deputy Minister	1917, Feb. 19	2,400 00	
	J. Farrington	Clerk	1907, Nov. 11	1,300 00	
	A. G. Thompson	do	1907, Sept. 23	1,000 00	Resigned August 31, 1919.
	W. A. Fleming	do	1914, Apr. 30	1,000 00	
	R. P. Ferguson	Stenographer	1918, Apr. 2	900 00	
Lands Branch	J. J. Murphy	Advisory Chief Clerk	1872, May 1	2,300 00	
	W. C. Cain	Chief Clerk	1903, Mar. 1	2,400 00	
	H. E. Johnston	Clerk of Military Grants	1905, Mar. 25	1,850 00	
	W. R. Ledger	Clerk of Sales	1894, Feb. 15	1,750 00	
	S. Draper	Clerk of Free Grants	1900, May 1	1,700 00	
	S. A. Platt	Clerk	1905, June 12	1,350 00	
	F. A. Lucas	do	1906, Dec. 18	1,400 00	
	J. E. Drinkwater	do	1915, Oct. 19	1,400 00	
	C. S. Jones	Clerk of Patents	1890, May 22	2,150 00	
	W. S. Sutherland	Engrossing Clerk	1900, Mar. 18	1,600 00	
	C. E. Burns	Reference Clerk	1897, July 29	1,700 00	
	W. Carrell	Engrossing Clerk	1899, Dec. 18	1,500 00	
	A. E. Robillard	do do	1894, May 4	1,200 00	
	A. E. Roe	Clerk of Registers	1906, Oct 16	1,550 00	
	S. Ross	Stenographer	1917, July 9	950 00	
	M. Bengough	do	1896, Oct. 23	950 00	
	E. F. O'Neil	do	1902, July 7	950 00	
	E. G. Halliday	do	1907, Feb. 21	950 00	
	B. M. Benson	do	1909, May 25	900 00	
	E. Hills	do	1912, July 2	900 00	
	E. Singleton	do	1917, Apr. 16	850 00	
	L. V. Rorke	Director	1909, May 1	3,500 00	
	J. Hutcheon	Surveyor and Draughtsman	1913, Apr. 1	2,700 00	

Surveys	W. F. Lewis	Clerk	1872, Mar. 1	1,400 00	
	D. G. Boyd	Draughtsman	1896, Oct. 16	1,900 00	
	E. M. Jarvis	Clerk	1897, Apr. 25	1,650 00	
	J. B. Proctor	do	1897, Jan. 15	1,500 00	
	B. Rushford	Draughtsman	1910, Jan. 24	1,400 00	
	F. E. Blanchet	do	1906, May 15	1,400 00	
	A. Leaman	do	1907, Sept. 12	1,400 00	
	H. Treeby	do	1896, Jan. 25	1,500 00	
	J. Work	do	1909, May 18	1,600 00	
	M. H. Kirkland	Stenographer	1902, July 21	950 00	
	C. O'Connor	do	1907, Oct. 16	850 00	
	E. C. Armer	do	1909, Aug. 6	875 00	
Woods and Forests	J. A. G. Crozier	Advisory Chief Clerk	1867, Dec. 1	2,300 00	
	J. Houser	Chief Clerk	1905, July 17	2,150 00	
	J. B. Cook	Clerk	1894, Aug. 7	1,950 00	
	H. Gillard	do	1897, Dec. 6	1,750 00	
	F. J. Niven	do	1897, Dec. 15	1,800 00	
	W. F. Trivett	do	1900, June 25	1,600 00	
	R. H. Hodgson	do	1903, Oct. 15	1,450 00	
	A. H. O'Neil	do	1906, July 19	1,300 00	
	S. D. Meeking	do	1910, Feb. 8	1,200 00	
	E. H. Squire	do	1916, Jan. 4	1,200 00	
	E. H. Telfer	do	1915, Sept. 27	1,100 00	
	M. E. Bliss	Stenographer and Filing Clerk to Deputy Minister	1909, Aug. 16	1,000 00	
	C. Rowland	Stenographer	1912, May 1	950 00	
	H. Canton	do	1915, May 11	875 00	
Accounts	D. G. Ross	Accountant	1861, Apr. 15	3,000 00	
	H. M. Lount	Clerk	1903, Oct. 1	1,850 00	
	C. J. Clarke	do	1905, Aug. 9	1,450 00	
	R. Gordon	do	1912, July 30	1,250 00	
	W. A. Burritt	do	1907, Sept. 24	1,450 00	
	C. Bowland	Clerk and Stenographer	1908, July 9	950 00	
Forestry	E. J. Zavitz	Provincial Forester	1912, Nov. 7	3,500 00	
	J. H. White	Assistant Provincial Forester	1917, Apr. 1	3,000 00	Resigned Oct. 31, 1919.
	F. S. Newman	Forester	1913, Sept. 22	1,800 00	
	G. W. Harris	Clerk	1906, Sept. 1	1,300 00	
	N. L. Rogers	do	1911, Aug. 1	1,400 00	
	J. Bald	Stenographer	1913, June 12	850 00	

Appendix No. 1.—Concluded.

Return of Officers and Clerks of the Department of Lands, Forests and Mines for the year ending October 31st, 1919.

Branch.	Name.	Designation.	When Appointed.	Salary per annum.	Remarks.
Colonization	H. A. Macdonell	Director	1910, Feb. 16....	2,500 00	
	J. Argue	Clerk	1905, Apr. 1....	1,750 00	
	R. A. Jones	do	1906, Mar. 1....	1,600 00	
	C. W. Garthwaite	do	1910, Apr. 1....	1,400 00	
	S. O. Dennis	Clerk and Stenographer.....	1910, Mar. 2...	950 00	
	R. Duggan	Stenographer	1903, June 30...	950 00	
	F. R. Dunlop	do	1911, Nov. 1...	900 00	
	B. McDonald	do	1910, June 21....	950 00	
Records	S. K. Burdin	Chief Clerk	1916, Apr. 6...	2,500 00	
	C. Dies	Clerk	1905, Oct. 2....	1,500 00	
	A. P. Saunders	do	1912, May 13...	1,300 00	
	C. W. St. John	do	1906, July 9...	1,250 00	
	A. Ferguson	do	1915, Dec. 15....	1,400 00	
	W. B. Baines	do	1912, Apr. 9....	1,200 00	
	F. Samuels	do	1903, Dec. 5....	1,200 00	
	N. Mathewson	do	1915, May 7....	1,100 00	
	H. Brophy	Mailing Clerk, etc.	1898, Oct. 1....	1,150 00	
Colonization Roads	C. H. Fullerton	Superintendent	1915, Oct. 15....	3,500 00	
	M. P. Doherty	Accountant and Chief Clerk.	1898, May 1...	1,850 00	
	C. H. Meader	Surveyor and Draughtsman..	1912, June 14...	1,700 00	
	J. H. Bradshaw	Clerk	1884, June 10...	1,400 00	
	A. Gamey	do	1914, July 19...	925 00	
	P. Godkin	Stenographer	1917, Aug. 27....	925 00	
Bureau of Mines	T. W. Gibson	Deputy Minister	1891, June 19...	4,500 00	
	R. D. Fisher	Secretary	1905, Feb. 21...	1,800 00	
	D. H. Barr	Clerk	1906, Aug. 7...	1,600 00	
	F. L. Godson	do	1915, Mar. 22...	1,150 00	
	W. Lemoine	do	1907, Jan. 29...	1,450 00	
	Anne Moffatt	do	1901, Feb. 25...	1,400 00	
	A. G. Scovell	do	1907, June 17...	1,450 00	
	J. L. McNaughton	Clerk and Stenographer....	1908, Feb. 10....	950 00	
	H. W. Batchelor	Stenographer	1911, Aug. 16....	900 00	
	M. G. Baptie	Clerk and Stenographer...	1917, May 10....	850 00	
	R. McElree	do do	1916, June 19....	800 00	

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 2.

List of Agents for the year ending October 31st, 1919.

Name.	Post office address	District or County.	Date of appointment.	Salary per annum.	Remarks.
		Land Agents.			
Anderson, T. V.	Hearst	Part District of Algoma	1913, May 9.	$800 00	
Arthurs, E.	Espanola Mills	do do	1915, May 7.	200 00	
Baker, R. H.	Minden	Part Victoria	1907, Oct. 1.	350 00	
Bolger, J. W.	New Liskeard	Lake Temiskaming, District of Nipissing	1913, July 17.	1,000 00	
Both, C.	Denbigh	Part of Frontenac and Addington	1905, Oct. 20.	200 00	
Brown, John	Markstay	do District of Nipissing and Sudbury	1916, June 27.	500 00	
Brown, J. B.	Bracebridge	Muskoka District	1905, July 28.	.....	For salary see Homestead Inspector.
Burrows, W. A.	Port Arthur	Part District of Thunder Bay	1912, Jan. 30.	1,000 00	
Cameron, W.	Stratton Station	do do Rainy River	1911, Apr. 27.	500 00	
Campbell, I. M.	Parry Sound	do do Parry Sound	1914, Nov. 12.	500 00	
Dempsay, S. J.	Cochrane	do do Nipissing	1911, Feb. 9.	1,000 00	
Dodds, T.	Thessalon	do do Algoma	1915, May 4.	500 00	
Douglas, W. J.	Maynooth	do Hastings	1912, June 12.	500 00	
Ellis, H. J.	Powassan	do District of Parry Sound	1909, May 21.	500 00	
Freeborn, Dr. J. S.	Magnetawan	do do do	1905, Nov. 10.	500 00	
Gibson, J. E.	Dryden	District of Rainy River	1914, Nov. 20.	900 00	
Ginn, F. E.	Matheson	Part District of Nipissing	1912, Mar. 20.	1,000 00	
Hales, W.	Apsley	do County of Peterborough	1911, July 20.	250 00	
Hollands, C. J.	Fort Frances	do Townplot of Alberta and District of Rainy River	1892, Oct 12.	300 00	
Jenkin, W.	Emsdale	do District of Parry Sound	1908, July 29.	500 00	Died May 23rd, 1919.
McFayden, A.	Emo	do do Rainy River	1905, Sept. 8.	600 00	
MacLennan, J. K.	Sudbury	do do Sudbury	1905, July 3.	700 00	
Noble, E.	Sault Ste. Marie	do do Algoma	1913, Feb. 1.	300 00	
Parsons, W. J.	North Bay	do do Nipissing	1908, Apr. 8.	800 00	
Philion, J. A.	Sturgeon Falls	do do do	1907, Sept. 13.	500 00	
Prince, A.	Wilno	do of Renfrew	1905, July 12.	500 00	
Small, R.	Mattawa	do District of Nipissing	1910, June 30.	500 00	
Spry, W. L.	Kenora	do do Rainy River	1909, Sept. 21.	600 00	Also Mining Recorder.
Teasdale, R. A.	Massey	do do Sudbury	1917, July 1.	500 00	
Thaw, D.	Emsdale	do do Parry Sound	1919, July 2.	500 00	
Watt, F.	Pembroke	do of Renfrew	1913, May 28.	300 00	
Whybourne, W. E.	Marksville	do of St. Joseph Island	1905, Apr. 7.	300 00	
Wilson, A. N.	Kinmount	do of Peterborough	1915, June 1.	175 00	
Woollings, J.	Englehart	do of District of Nipissing	1908, June 30.	800 00	

Appendix No. 2.—Continued.

List of Agents for the year ending October 31st, 1919.

Name.	Post office address	District or County.	Date of appointment.	Salary per annum.	Remarks.
		Homestead Inspectors.			
Barr, J.	Fort Frances	District of Rainy River	1906, Nov. 23.	1,200 00	
Bastien, J. A.	Chelmsford	W. part of Sudbury District	1913, May 2.	1,000 00	
Brown, J. B.	Bracebridge	Muskoka District	1905, July 28.	1,000 00	Also Crown Lands Agent.
Burnes, C. W.	South River	Parry Sound District	1905, Nov. 15.	1,000 00	
Cragg, W. V.	New Liskeard	S. part of Temiskaming District	1913, Mar. 27.	1,200 00	
Dean, T.	Sault Ste. Marie.	Algoma District	1908, July 29.	800 00	
Hughes, T.	Murillo	Thunder Bay District	1908, July 20.	1,000 00	
Owens, H. B.	Cache Bay	E. part Sudbury and W. part Algoma Districts	1918, June 25.	900 00	
Smith, D.	Cochrane	N. part of Temiskaming District	1912, Apr. 16.	1,500 00	
Watson, T. P.	Englehart	Centre part of Temiskaming District	1905, May 10.	1,200 00	
Wigle, R. G.	Dryden	Kenora District	1914, May 27.	1,200 00	
		Timber Agents.			
Bremner, G.	Cochrane	Part Temiskaming and Algoma Districts	1913, May 20.	1,800 00	
Christie, W. P.	Parry Sound	Part Parry Sound and Muskoka Districts	1903, Dec. 4.	1,700 00	
Darby, E. J.	Ottawa	Part Ottawa District	1889, July 26.	1,500 00	
Hawkins, S. J.	Webbwood	Part Algoma and Sudbury Districts	1905, Aug. 16.	1,700 00	
Henderson, C.	Sudbury	do do	1902, Jan. 1.	2,100 00	
Huckson, A. H.	Sault Ste. Marie.	Part District of Algoma	1914, Apr. 1.	1,800 00	
Jones, W. M.	Fort Frances	Rainy River District	1918, Nov. 15.	1,500 00	
MacDonald, S. C.	New Liskeard	Part Temiskaming District	1907, Jan. 21.	1,700 00	
Margach, W.	Kenora	Kenora District	1889, May 16.	1,600 00	
McDonald, H.	Thessalon	Part District of Algoma	1905, Apr. 20.	1,500 00	
McDougall, J. T.	North Bay	Nipissing and Part Sudbury District	1908, July 8.	1,800 00	
Oliver, J. A.	Port Arthur	Thunder Bay District	1905, Sept. 30.	1,850 00	
Stevenson, A.	Peterborough	Belleville	1905, Oct. 4.	1,500 00	
Wood, W. G. A.	South Porcupine.	Porcupine District	1917, Feb. 28.	1,400 00	

Appendix No. 2.- Continued.

List of Agents for the year ending October 31st, 1919.

Name.	Post office address.	District or County.	Date of appointment.	Salary per annum.	Remarks.
		Mining Recorders.			
Campbell, C. A.	Sudbury	Sudbury Mining Division	1910, Jan. 6.	1,250 00	
Gauthier, G. H.	South Porcupine.	Porcupine Mining Division	1912, July 16.	1,500 00	
Hough, J. A.	Matheson	Larder Lake Mining Division	1907, May 22.	1,550 00	
Miller, N.	Sault Ste. Marie.	Sault Ste. Marie Mining Division	1915, June 9.	1,200 00	
Morgan, J. W.	Port Arthur	Port Arthur Mining Division	1906, Dec. 28.	1,200 00	
Morgan, M. R. ...	Elk Lake	Gowganda and Montreal River Min. Div....	1919, May 19.	1,100 00	
McAulay, N. J.	Haileybury ...	Temiskaming Mining Division	1915, May 8	1,900 00	
McQuire, H. F.	Parry Sound	Parry Sound Mining Division.....	1906, Sept. 26.	500 00	
Sheppard, H. E. ...	Elk Lake	Gowganda Mining Division	1909, Feb. 10.	1,100 00	Transferred to Northern Development Branch, May 1, 1919.
Spry, W. L.	Kenora	Kenora Mining Division	1909, Sept. 21.	1,050 00	Also Crown Lands Agent.
		Emigration Agents.			
Sims, Brig.-General R. F. M.	London	England	1918, Dec. 3.	6,500 00	
Clark, J. M.	do	do	1913, Mar. 17.	3,500 00	

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 3.

Statement of Lands Sold and Leased. Amount of Sales and Leases and Amount of Collections for the year ending October 31st, 1919.

Service.	Acres sold and leased.	Amount of sales and leases.	Collection on sales and leases.
Lands Sold:		$ c.	$ c.
Agricultural and Townsites	49,704.32	48,119 74	79,841 77
Mining	10,600.28	28,350 01	28,510 54
Clergy Lands			487 70
Common School Lands	72.33	109 87	7,984 02
Grammar School Lands			627 54
University Lands	119.50	59 75	2,064 40
Lands Leased:			
Mining	2,137.21	1,562 99	14,270 78
Crown	8,815.06	2,094 25	64,950 00
Temagami	5.35	70 00	1,074 15
	71,454.05	80,366 61	199,810 90

D. GEO. ROSS,
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ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 4.

Statement of Revenue of the Department of Lands, Forests and Mines for the year ending October 31st, 1919.

Service.	$ c.	$ c.	$ c.
Land Collections.			
Crown Lands:			
Agricultural	74,799 49		
Townsites	5,042 28		
		79,841 77	
Mining Sales	.....	28,510 54	
Clergy Lands	487 70		
Common School Lands	7,984 02		
Grammar School Lands	627 54		
University Lands	2,064 40		
		11,163 66	
			119,515 97
Rent:			
Mining Leases	14,270 78		
Temagami Leases	1,074 15		
		15,344 93	
Crown Leases	25,894 27		
Sand and Gravel Royalty	25,218 16		
" " Rentals	3,479 47		
Water Powers	9,388 85		
Algonquin Provincial Park	969 25		
		64,950 00	
			80,294 93
Miners' Licenses	27,178 55		
Permits	1,697 25		
Recording Fees	35,087 10		
		63,962 90	
Supplementary Revenue:			
Acreage Tax	33,126 34		
Profit Tax	553,027 15		
Gas Tax	38,797 71		
Gas License	1,370 00		
		626,321 20	
			690,284 10
Woods and Forests.			
Bonus	.....	872,598 69	
Timber Dues	.....	662,928 30	
Ground Rent	.....	87,682 52	
Transfer Fees	.....	5,205 00	
Fire Protection	.....	174,666 85	
			1,803,081 36
Provincial Assay Fees	729 60		
Casual Fees	1,172 53		
Cullers' Fees	538 50		
Forest Reserves Guides' Fees	50 00		
		2,490 63	
Algonquin Provincial Park	.....	29,484 44	
			31,975 07
Refunds.			
Forest Ranging	.....	24,324 32	
Fire Ranging	.....	4,202 65	
War Relief	.....	840 00	
Emigration Work, Great Britain	.....	462 07	
Fuel Investigation	.....	348 41	
Explorations and Investigations	.....	153 50	
Agents' Salaries	.....	85 00	
Quetico Provincial Park	.....	82 00	
Contingencies	.....	46 90	
Forest Reserves	.....	40 00	
			30,584 85
			2,755,736 28

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 5.

Statement of Receipts of the Department of Lands, Forests and Mines for the year ending October 31st, 1919, which are considered as Special Funds.

Service.	$ c.	$ c.
Clergy Lands.		
Principal	254 80	
Interest	232 90	
		487 70
Common School Lands.		
Principal	4,515 87	
Interest	3,468 15	
		7,984 02
Grammar School Lands.		
Principal	360 28	
Interest	267 26	
		627 54
University Lands.		
Principal	1,424 20	
Interest	640 20	
		2,064 40
		11,163 66

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 6.

Statement of Disbursements of the Department of Lands, Forests and Mines, for the year ending October 31st, *1919*.

Service.	$ c.	$ c.	$ c.
AGENTS' SALARIES AND DISBURSEMENTS.			
Land, $18,915.79.			
Anderson, T. V.	633 32		
Disbursements	66 00		
		699 32	
Arthurs, E.	.....	200 00	
Baker, R. H.	.....	350 00	
Bolger, J. W.	916 66		
Disbursements	206 39		
		1,123 05	
Both, C.	.....	200 00	
Brown, John	500 00		
Disbursements	43 98		
		543 98	
Burrows, W. A.	1,000 00		
Disbursements	365 20		
		1,365 20	
Cameron, W.	500 00		
Disbursements	43 00		
		543 00	
Campbell, Miss I. M.	500 00		
Disbursements	15 00		
		515 00	
Dempsay, S. J.	1,000 00		
Disbursements	73 50		
		1,073 50	
Dodds, T.	500 00		
Disbursements	4 00		
		504 00	
Douglas, W. J.	500 00		
Disbursements	36 40		
		536 40	
Ellis, H. J.	.....	500 00	
Freeborn, J. S.	500 00		
Disbursements	18 00		
		518 00	
Gibson, J. E.	816 67		
Disbursements	158 85		
		975 52	
Ginn, F. E.	916 66		
Disbursements	81 90		
		998 56	
Hales, W.	250 00		
Disbursements	4 90		
		254 90	
Hollands, C. J.	.....	300 00	
Jenkin, W.	291 00		
Disbursements	6 26		
		297 26	
McFayden, A.	600 00		
Disbursements	42 77		
		642 77	
MacLennan, J. K.	.....	700 00	
Carried forward	.....	12,840 46	

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		12,840 46	
AGENTS' SALARIES AND DISBURSEMENTS—*Continued.*			
Land—Concluded.			
Noble, E.		300 00	
Parsons, W. J.	716 32		
Disbursements	176 50		
		892 82	
Philion, J. A.	500 00		
Disbursements	23 67		
		523 67	
Prince, A.	500 00		
Disbursements	30 00		
		530 00	
Small, R.	500 00		
Disbursements	29 00		
		529 00	
Spry, W. L.	600 00		
Disbursements	488 80		
		1,088 80	
Thaw, D.	166 00		
Disbursements	2 87		
		168 87	
Teasdale, R. A.		500 00	
Watt, F.		300 00	
Whybourne, W. E.	300 00		
Disbursements	4 10		
		304 10	
Wilson, A. N.	175 00		
Disbursements	7 75		
		182 75	
Woollings, J.	716 32		
Disbursements	39 00		
		755 32	
Homestead Inspectors, $16,934.76.			
Barr, J.	1,200 00		
Disbursements	792 90		
		1,992 90	
Bastien, J. A.	916 66		
Disbursements	235 25		
		1,151 91	
Brown, J. B.	1,000 00		
Disbursements	311 35		
		1,311 35	
Burnes, C. W.	1,000 00		
Disbursements	349 68		
		1,349 68	
Cragg, W. V.	1,200 00		
Disbursements	333 63		
		1,533 63	
Dean, T.	800 00		
Disbursements	186 65		
		986 65	
Hughes, T.	1,000 00		
Disbursements	433 30		
		1,433 30	
Owens, H. B.	838 48		
Disbursements	914 75		
		1,753 23	
Carried forward		30,428 44	

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward			30,428 44
AGENTS' SALARIES AND DISBURSEMENTS—*Continued.*			
Homestead Inspectors—Concluded.			
Smith, D.	1,500 00		
Disbursements	418 11		
		1,918 11	
Watson, T. P.	1,200 00		
Disbursements	614 75		
		1,814 75	
Wigle, R. G.	1,200 00		
Disbursements	489 25		
		1,689 25	
Timber, $31,580.81.			
Bremner, G.	1,800 00		
Disbursements	440 38		
		2,240 38	
Christie, W. P.	1,616 00		
Disbursements	347 80		
		1,963 80	
Hawkins, S. J.	1,616 00		
Disbursements	351 15		
		1,967 15	
Henderson, C.	2,018 67		
Webster, W. A., Assistant	210 00		
Disbursements	419 21		
		2,647 88	
Huckson, A. H.	1,800 00		
Disbursements	750 78		
		2,550 78	
Jones, W. M.	1,442 30		
McDonald, A., Assistant	1,500 00		
Watts, G.	57 70		
Disbursements	242 55		
		3,242 55	
MacDonald, S. C.	1,700 00		
Disbursements	198 33		
		1,898 33	
Margach, W.	1,600 00		
Legris, J., Assistant	1,600 00		
Cunningham, Mrs. E. A., Stenographer	442 75		
Gamble, Miss V., Stenographer	24 75		
Disbursements	524 37		
		4,191 87	
McDonald, H.	1,500 00		
Disbursements	215 55		
		1,715 55	
McDougall, J. T.	1,716 67		
Disbursements	416 26		
		2,132 93	
Oliver, J. A.	1,724 83		
Campbell, Miss M., Stenographer	119 23		
Godfrey, Miss S., Stenographer	530 93		
Disbursements	565 80		
		2,940 79	
Stevenson, A.	1,500 00		
Disbursements	373 40		
		1,873 40	
Carried forward		65,215 96	

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		65,215 96	
AGENTS' SALARIES AND DISBURSEMENTS—*Concluded.*			
Timber—Concluded.			
Whelan, P. J., disbursements		442 59	
Wood, W. G. A.	1,400 00		
Disbursements	372 81		
		1,772 81	
Miscellaneous, $1,562.20.			
Green, H. P., Caretaker, Islands in Charlston Lake		50 00	
Jamieson, W. H., Caretaker, Islands in Dog and Laboria Lakes		50 00	
McArthur, T. A., Inspector of Agencies	750 00		
Disbursements	712 20		
		1,462 20	
			68,993 56
OTTAWA AGENCY.			
Darby, E. J., Agent		1,500 00	
Larose, S. C., Clerk		1,000 00	
Rent	700 00		
Disbursements	40 55		
		740 55	
			3,240 55
CULLERS' ACT.			
Greer, Wm.	12 00		
Disbursements	3 60		
		15 60	
Jones, W. M. ....Disbursements		35 70	
Oliver, J. A. ....Disbursements		9 66	
			60 96
FIRE RANGING			528,734 64
FOREST RANGING			140,338 50
FOREST RESERVES			6,140 25
SALARIES, WAGES AND EXPENSES OF MEN, RE RE-FORESTATION			6,923 56
PURCHASE, CARE AND FEED OF HORSES, AND PURCHASE OF SEED, NURSERY STOCK, FERTILIZER AND NURSERY EQUIPMENT			2,316 63
PURCHASING OPTIONS AND RENTALS OF LAND			90 00
INVESTIGATION IN REFORESTATION			5,465 17
ALLOWANCE TO SCHOOL SECTION IN TOWNSHIP OF SOUTH WALSINGHAM			150 00
CARE AND MAINTENANCE OF BUILDINGS			59 46
INVESTIGATION OF FOREST TREE DISEASES			5,651 77
SURVEYS			128,823 25
Carried forward			896,988 30

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward			896,988 30
Board of Surveyors			200 00
Colonization Roads			390,621 54
Annual Membership Fees			49 93
Workmen's Compensation			150 00
Insurance			711 73
Miscellaneous			117 86
Unforeseen and Unprovided			370 92
Grant to Canadian Forestry Association			1,000 00
Refunds (Miscellaneous)			3,201 33
Colonization and Immigration.			
Printing, Advertising, etc.			21,351 13
Land Guides			254 00
Emigration Work in Great Britain			34,052 07
War Relief			2,544 07
Women's Welcome Hostel			1,400 00
Women's Hostel and Travellers' Aid, Ottawa			500 00
Grant to Brigadier-General R. F. M. Sims			5,000 00
Rental Immigration Office			572 15
Purchase and distribution of films and moving picture machines			4,543 95
Allowance to J. M. Clark			350 00
Mines and Mining.			
Miller, W. G., Provincial Geologist, services	5,000 00		
Disbursements	130 36		
		5,130 36	
Knight, C. W., 1st Assistant Geologist, services	3,000 00		
Disbursements	1,611 21		
		4,611 21	
Burrows, A. G., 2nd Assistant Geologist, services	2,850 00		
Disbursements	546 33		
		3,396 33	
Hopkins, P. E., 3rd Assistant Geologist, services	2,400 00		
Disbursements	524 63		
		2,924 63	
Rogers, W. R., Topographer, services	2,500 00		
Disbursements	952 45		
		3,452 45	
Bell, W. J., Cartographer, services		1,350 00	
Mickle, G. R., Mine Assessor, services	4,400 00		
Disbursements	245 40		
		4,645 40	
Carried forward		25,510 38	1,363,978 98

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		25,510 38	1,363,978 98
MINES AND MINING—*Continued.*			
Godson, T. E., Mining Commissioner, services	5,000 00		
Morris, W. H., Mining Commissioner's Clerk, services	1,850 00		
White, Miss N., Stenographer	811 84		
Booth, Miss E., do	98 67		
Disbursements	687 74		
		8,448 25	
Sutherland, T. F., Chief Inspector of Mines, services	3,800 00		
Disbursements	1,292 29		
		5,092 29	
Collins, E. A., 1st Assistant Inspector of Mines, services for one month. Resigned		125 00	
Brown, A. H., 1st Assistant Inspector of Mines, services for nine months. Died	2,250 00		
Disbursements	361 10		
		2,611 10	
McMillan, J. G., 2nd Assistant Inspector of Mines, services	2,546 28		
Disbursements	182 85		
		2,729 13	
Bartlett, J., 3rd Assistant Inspector of Mines, services	2,817 00		
Disbursements	1,353 32		
		4,170 32	
Webster, A. R., 4th Assistant Inspector of Mines, services	3,000 00		
Disbursements	1,359 90		
		4,359 90	
Jackson, P. A., Surveyor, services	1,700 00		
Disbursements	310 19		
		2,010 19	
Estlin, E. S., Natural Gas Commissioner, services	3,600 00		
Beno, J. W., Inspector Gas and Oil Wells, services	755 73		
Scott, J., Inspector Gas and Oil Wells, services	937 48		
Near, A. E., Inspector Gas and Oil Wells, services	937 48		
Burn, B. D., Natural Gas Inspector, services	427 88		
Estlin, Miss M., Stenographer	234 62		
Estlin, Miss E. M., do	530 76		
Estling, H., services	18 00		
Disbursements	3,480 39		
		10,922 34	
McArthur, T. A., Inspector of Recorders' Offices, services	900 00		
Disbursements	552 66		
		1,452 66	
Burwash, Dr. E. M., services	558 65		
Disbursements	999 10		
		1,557 75	
Carlyle, A. W., services	199 23		
Disbursements	15 95		
		215 18	
Conners, F. J., services		129 23	
Cross, J. G., services	875 00		
Disbursements	833 53		
		1,708 53	
Dingman, A. H., services		191 53	
Carried forward		71,233 78	1,363,978 98

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward	.....	71,233 78	1,363,978 98
MINES AND MINING—*Concluded.*			
Elliot, G. R., services	.....	233 08	
Fair, H. A., services	.....	244 62	
Gibson, G. A. L., services	300 00		
Disbursements	204 85		
		504 85	
Heisey, K. B., services	136 16		
Disbursements	60 00		
		196 16	
Hunnisett, J. E., services	.....	120 00	
Howell, Edwin, services	.....	253 85	
Kerr-Lawson, D. E., services	.....	199 42	
Kirkconnell, J. R., services	.....	203 08	
Montgomery, R. W., services	.....	191 53	
Parsons, Prof. A. L., services	713 46		
Disbursements	634 19		
		1,347 65	
Presgrave, R., services	.....	233 08	
Stevens, Joseph, services	.....	124 00	
Tyrrell, Geo., services	.....	153 64	
Weelands, J. E., services	.....	244 62	
Nicholas, F., preparing index	.....	250 00	
King's Printer	.....	1,111 52	
Express	.....	47 57	
Telegraphing	.....	177 60	
Typewriter repairs, etc.	.....	12 00	
Sundries	.....	226 24	
			77,308 29
MINING RECORDERS.			
Campbell, C. A., Recorder	1,219 24		
Loudon, W. E., Travelling Draughtsman	330 77		
LeClair, Miss H., Stenographer	437 50		
Disbursements	371 05		
		2,358 56	
Gauthier, G. H., Recorder	1,500 00		
O'Brien, J. D., Clerk	1,138 80		
Disbursements	1,153 49		
		3,792 29	
Hough, J. A., Recorder	1,457 73		
Ginn, H. G., Clerk	641 00		
Loudon, W. E., Travelling Draughtsman	276 92		
Matchett, Miss F., Stenographer	135 00		
Robertson, Miss M., do	127 69		
Disbursements	270 30		
		2,908 64	
Miller, N., Recorder	1,138 48		
Disbursements	227 45		
		1,365 93	
Morgan, J. W., Recorder	1,140 48		
McDonald, Mrs. M. M., Acting Recorder	256 73		
Disbursements	384 73		
		1,781 94	
McAulay, N. J., Recorder	1,900 00		
Sarsfield, J. M., Clerk	1,318 24		
Munro, Miss E., Stenographer	796 74		
Disbursements	772 77		
		4,787 75	
McQuire, H. F., Recorder	500 00		
Disbursements	157 05		
		657 05	
Carried forward	.....	17,652 16	1,441,287 27

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward	.....	17,652 16	1,441,287 27
MINING RECORDERS—*Concluded.*			
Sheppard, H. E., Recorder	550 00		
Disbursements	165 03		
		715 03	
Morgan, M. R., Recorder	541 50		
Loudon, W. E., Travelling Draughtsman	359 62		
Disbursements	180 05		
		1,081 17	
Spry, W. L., Recorder	956 73		
Disbursements	215 40		
		1,172 13	
Ginn, H. G., Recorder	477 24		
Loudon, W. E., Travelling Draughtsman	112 49		
Matchett, Miss F., Stenographer	357 50		
Disbursements	2,324 05		
		3,271 28	
Express	86 40		
King's Printer	686 57		
Telegraphing	6 53		
Typewriter repairs, etc.	10 35		
		789 85	
			24,681 62
PROVINCIAL ASSAY OFFICE.			
McNeill, W. K.	2,456 73		
Disbursements	49 55		
		2,506 28	
Rothwell, T. E.	1,736 48		
Disbursements	100 55		
		1,837 03	
Leat, Arthur	.....	556 00	
Supplies	896 99		
Disbursements	278 91		
		1,175 90	
			6,075 21
MINERAL DISPLAY AT EXHIBITIONS.			
Johns, Chas., Services *re* Toronto Exhibition	.....	31 50	
McCarthy, C. P., Services *re* Toronto Exhibition	150 50		
Disbursements	69 80		
		220 30	
West, W. J., Services *re* Toronto Exhibition	.....	66 00	
General Disbursements *re* Exhibitions	.....	2,316 72	
			2,634 53
RESEARCH WORK	.....	.....	6 10
SOCIETY MEMBERSHIP FEES	.....	.....	243 89
EXPERIMENTAL TREATMENT OF ORES	.....	.....	2,085 43
SPECIAL SURVEYS IN MINING DISTRICTS	.....	.....	1,602 29
NATURAL GAS ADVISORY BOARD	.....	.....	6,460 13
CONTINGENCIES.			
Departmental.			
Printing and Binding	1,166 21		
Stationery	7,066 65		
		8,232 86	
Carried forward	.....	8,232 86	1,485,076 47

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		8,232 86	1,485,076 47
CONTINGENCIES—*Continued.*			
Departmental—Concluded.			
Express	258 68		
Postage	1,519 97		
		1,778 65	
Telegraphing	682 38		
Car Fare	60 00		
		742 38	
Subscriptions	331 23		
Advertising	3,675 55		
		4,006 78	
Typewriters, repairs, etc.		382 50	
Bindon, F. W., travelling expenses	50 00		
Cain, W. C., travelling expenses	246 15		
Carrell, W., travelling expenses	11 27		
Ferguson, Hon. G. H., travelling expenses	1,000 00		
Grigg, A., travelling expenses	58 85		
Hele, C. C., travelling expenses	255 58		
Hutcheon, J., travelling expenses	498 81		
Keefer, F. H., Services *re* Level of Lake of the Woods	1,503 00		
Robbins, H. M., travelling expenses	44 30		
Rorke, L. V., travelling expenses	140 55		
Work, J., travelling expenses	129 75		
		3,938 26	
Extra Clerks	9,278 79		
Maps	2,200 80		
Sundries	741 35		
		12,220 94	
			31,302 37
Bureau of Mines.			
Printing and Binding	2,594 72		
Stationery	4,483 55		
		7,078 27	
Postage	822 05		
Telegraphing	118 38		
Express and Cartage	21 60		
Advertising	2,205 14		
Subscriptions	324 02		
		3,491 19	
Typewriters, repairs, etc.	208 40		
Gibson, T. W., travelling expenses	124 07		
Boogers, L. H., translations	37 80		
Douglas, D. S., compiling index	100 00		
George, H., rock sections	62 30		
Stewart, W. A., rock sections	6 00		
Royal Ontario Museum, rock sections	3 00		
Work, J., services	150 00		
		691 57	
Extra Clerks	1,432 44		
Sundries	38 44		
		1,470 88	
			12,731 91
Forestry.			
Printing and Binding	190 90		
Stationery	382 11		
		573 01	
Carried forward		573 01	1,529,110

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		573 01	1,529,110 75
CONTINGENCIES—*Concluded.*			
FORESTRY—*Concluded.*			
Zavitz, E. J., travelling expenses	224 08		
White, J. H., travelling expenses	34 45		
		258 53	
Postage	250 00		
Telegraphing	14 57		
Express and Cartage	15 15		
Typewriters, repairs, etc.	19 00		
Supplies	51 08		
Sundries	243 95		
		593 75	
			1,425 29
Colonization.			
Printing and Binding	34 08		
Stationery	353 89		
		387 97	
Postage	350 49		
Express	236 59		
		587 08	
Telegraphing	285 21		
Subscriptions	49 36		
Typewriter repairs, etc.	29 25		
		363 82	
Bindon, F. W., travelling expenses	24 50		
Argue, J., travelling expenses	25 25		
Jones, R. A., travelling expenses	332 15		
Macdonell, H. A., travelling expenses	258 92		
McGillivray, A. D., travelling expenses	64 35		
Tutt, H., travelling expenses	4 19		
Sundries	52 02		
		761 38	2,100 25
Colonization Roads.			
Printing and Binding	448 07		
Stationery	418 89		
		866 96	
Postage	248 82		
Express	4 64		
		253 46	
Telegraphing	49 00		
Subscriptions	6 50		
Typewriters, repairs, etc.	317 50		
		373 00	
Fullerton, C. H., travelling expenses	511 02		
Meader, C. H., travelling expenses	589 15		
		1,100 17	
Extra Clerks	1,485 00		
Sundries	52 05		
		1,537 05	4,130 64
			1,536,766 93

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 7.

Statement of expenses on account of various services under the direction of the Department of Lands, Forests and Mines for the year ending October 31st, 1919.

Service.	$ c.
Algonquin Provincial Park	31,223 76
Quetico Provincial Park	11,291 69
Fuel Investigation	118,089 55
Royal Nickel Commission	46 85
Veterans' Commutation	150 00
Legal Investigations	2,171 50
Fuel Problem	15,000 00
	177,973 35

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 8.

PATENTS OFFICE.

Statement of Patents, etc., issued from 1st November, 1918, to 31st October, 1919.

Public Lands (late Crown)	514
" " (late School)	32
" " (late Clergy)	4
" " (University)	8
Free Grant Lands (Act of 1913)	292
" " " (Act of 1901) Veterans	68
Mining Lands (Patents)	310
" " (Leases)	67
Crown Leases	13
Licenses of Occupation	51
Temagami Island Leases	4
Sand and Gravel Licenses	12
Quarry Claims	3
Pine Patents	6
Orders-in-Council	10
Total	1,394

CHARLES S. JONES,
Clerk of Patents.

ALBERT GRIGG,
Deputy Minister Lands and Forests.

W. C. CAIN,
Chief Clerk.

Appendix

WOODS AND

Statement of Timber and Amounts accrued from Timber Dues, Ground

QUANTITY AND

Agencies.	Area covered by timber licenses.	Saw logs.				Boom and	
		Pine.		Other.		Pine.	
	Square miles.	Pieces.	Feet B.M.	Pieces.	Feet B.M.	Pieces.	Feet B.M.
Western Timber District	11,700½	4,979,650	174,165,661	793,696	23,476,842	46,321	5,353,802
Belleville Timber District	657¼	5,661	315,899	100,600	3,349,668	43	5,639
Ottawa Timber District	3,873¼	328,997	11,662,880	319,253	9,439,867	3,952	356,888
	16,231	5,314,308	186,144,440	1,213,549	36,266,377	50,316	5,716,329

General Statement

Agencies.	Tan Bark.	Railway Ties.	Posts.	Poles.	Bolts.	Pulp-wood.		
	Cords.	Pieces.	Pieces.	Pieces.	Cords.	Cords.	Transfer Fees.	Interest.
Western Timber District	1,633	5,131,073	44,853	12,806	1,196	304,017	$ c. 5,095 00	$ c. 27,108 86
Belleville Timber District	329	3,397	5,562	20	.....	450	.....	.....
Ottawa Timber District.....	946	6,184	429	2,347	.....	15,728	110 00	127 13
	2,908	5,140,654	50,844	15,173	1,196	320,195	5,205 00	27,235 99

JOHN HOUSER,
Chief Clerk in charge.

No. 9.

FORESTS.

Rent and Bonus during the year ending 31st October, 1919.

DESCRIPTION OF TIMBER.

Dimension.		Square Timber.		Piling.			Pine.		Cordwood.	
Other.									Hard.	Soft.
Pieces.	Feet B.M.	Pieces.	Cubic Feet.	Lineal feet.	Pieces	Feet B.M.	Pieces	Lineal Feet.	Cords.	Cords.
9,517	1,070,460	1,131	70,287	197,233	3,415	343,399	596	17,960	22,595	45,141
1,440	258,266	.....	.....	.....	.....	.....	.....	.....	216	.....
4,205	466,489	.....	.....	.....	.....	.....	.....	.....	1,500	5,424
15,162	1,795,215	1,131	70,287	197,233	3,415	343,399	596	17,960	24,311	50,565

of Timber.—Concluded.

Amounts accrued.

Trespass.	Timber dues.	Bonus.	Deposit timber sales.	Ground rent.	Fire protection.	Total.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
23,863 60	883,668 03	597,062 77	438,115 00	63,978 25	143,758 85	2,182,650 36
4,988 18	2,997 90	154 68	.....	3,360 00	4,603 80	16,104 56
556 93	32,455 58	.....	.....	20,250 00	26,304 20	79,803 84
29,408 71	919,121 51	597,217 45	*438,115 00	*87,588 25	*174,666 85	2,278,558 76

* Amount actually received.

ALBERT GRIGG,
Deputy Minister.

Appendix No. 10.

WOODS AND FORESTS BRANCH.

Statement of Revenue collected during the year ending October 31st, 1919.

Amount of	Western Collections at Department	$1,733,550 52
do	Belleville Collections at Department	10,582 26
do	Ottawa Collections at Department	58,948 58
		$1,803,081 36

WOODS AND FORESTS.

Bonus	$872,598 69
Timber dues	662,928 30
Ground rent	87,682 52
Transfer fees	5,205 00
Fire protection	174,666 85
	$1,803,081 36

WOODS AND FORESTS BRANCH REVENUE.

October 31st, 1919.

WESTERN DISTRICT—		
Timber dues	$621,318 02	
Bonus	434,176 54	
Ground rent	63,978 25	
Interest on dues	27,069 38	
Interest on ground rent	39 48	
Transfer fees	5,095 00	
Timber sale deposit	438,115 00	
Fire protection	143,758 85	
		$1,733,550 52
OTTAWA DISTRICT—		
Timber dues	$12,157 25	
Ground rent	20,250 00	
Interest on dues	72 34	
Interest on ground rent	54 79	
Transfer fees	110 00	
Fire protection	26,304 20	
		$58,948 58
BELLEVILLE DISTRICT—		
Timber dues	$2,311 31	
Bonus	307 15	
Ground rent	3,360 00	
Fire protection	4,603 80	
		10,582 26
		$1,803,081 36

JOHN HOUSER,
Chief Clerk in Charge.

ALBERT GRIGG,
Deputy Minister.

Appendix No. 11.

Statement of work done in the Military Office, Lands Branch of the Department of Lands and Forests, during the year ending October 31st, 1919.

Reference for Veterans' Patents issued	34
Locations under military certificates	45
Certificates applied in payment of lands	6
Certificates surrendered for commutation money	3
Letters received	1,572
Letters written	1,869
Special letters to agents	200
Special letters to mining recorders	260
Maps and reports supplied to veterans	150
Printed forms sent out	90
Copies of Veteran Act supplied	27

H. E. JOHNSTON,
Military Clerk.

ALBERT GRIGG,
Deputy Minister.

W. C. CAIN,
Chief Clerk in Charge.

Appendix No. 12.

Memorandum of parties who passed the Cullers' Examination of 1919.

Acheson, Lloyd, Box 1792, North Bay, Ontario, examined at North Bay, October 8th, 1919, licensed October 14th, 1919.

Mantel, Ross, Milnet, Ontario, examined at North Bay, October 8th, 1919, licensed October 14th, 1919.

McCool, Lawrence, Sudbury, Ontario, examined at North Bay, October 8th, 1919, licensed October 14th, 1919.

McGregor, W. H., Sturgeon Falls, Ontario, examined at North Bay, October 8th, 1919, licensed October 14th, 1919.

JOHN HOUSER,
Chief Clerk in Charge.

ALBERT GRIGG,
Deputy Minister.

Appendix No. 13.

RECORD BRANCH, 1918-19.

Communications received:

From Crown Lands Agents				7,183
" Mining Recorders				3,476
" Crown Timber Agents				4,389
" Homestead Inspectors				1,527
" Superintendent, Algonquin Park				460
" Superintendent, Quetico Park				112
Orders-in-Council				297
Telegrams				398
Soldiers and Sailors (letters)				526
Nickel Commission	(Figures supplied by them)			800
Northern Development Branch	"	"	"	8,367
Colonization Branch	"	"	"	9,381
Loan Commissioner	"	"	"	2,767
Mining Commissioner	"	"	"	3,123
Forestry Branch	"	"	"	13,134
Mine Assessor	"	"	"	1,826
Mine Inspector	"	"	"	818
Provincial Geologist	"	"	"	472
Colonization Roads (since May 14th, 1919)	"	"	"	3,529
All other sources				28,060
Total incoming (Minister's office not included)				90,645

Communications sent out:

To Crown Agents, Inspectors, Rangers and Park Superintendents				18,872
" General Public				22,340
" Circular Letters (timber sales)				3,210
Maps and blue prints				3,606
Mining Reports to foreign countries				580
Mining Reports to United States and other countries				3,000
Mining Acts				2,200
Nickel Commission (letters)	(Figures supplied by them)			600
Nickel Commission (reports)	"	"	"	450
Northern Development Branch (letters)	"	"	"	6,715
Northern Development Branch (seed grain)	"	"	"	1,509
Colonization Branch (letters)	"	"	"	7,781
Colonization Branch (Northern Ontario literature)	"	"	"	28,568
Colonization Branch (Ontario maps)	"	"	"	7,177
Loan Commissioner				4,955
Mining Commissioner (letters)				7,067
Mining Commissioner (orders)				878
Forestry Branch (letters)				6,504
Forestry Branch (circulars)				2,300
Forestry Branch (parcels by post)				810
Mine Assessor				1,865
Mine Inspector				711
Provincial Geologist				318
Colonization Roads (since May 14th, 1919)				2,906
Total outgoing (Minister's office not included)				134,922

Postage:

Postage for the year,			Records Branch	$2,975 20
"	"	"	Colonization Branch	306 12
"	"	"	Loan Commissioner	180 00
"	"	"	Forestry Branch	350 00
"	"	"	Colonization Roads (since May 14th)	153 40

Files:

New files issued,			general	4,623
"	"	"	accounts chargeable	549
"	"	"	accounts free	175

S. K. BURDIN,
Chief Clerk, Records Branch.

ALBERT GRIGG,
Deputy Minister.

Appendix No. 14.

Statement showing the number of Locatees and of acres located; of purchasers and of acres sold; of lots resumed for non-performance of the settlement duties and of patents issued in Free Grant Townships during the year ending 31st October, 1919.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Baxter	Muskoka.	J. B. Brown, Brace-	2	281	1	3	1	201	3	277
Brunel	"	" bridge	1	201	1	1	1	201	1	201
Cardwell	"	" "	4	652	...	.....	2	380	2	352½
Chaffey	"	" "	2	298	...	.....	3	298	1	200
Draper	"	" "	....	.....	...	.....	....	.....	1	95
Franklin	"	" "	1	95	1	3	1	95	4	208
Freeman	"	" "	1	100	1	25	....	.....	3	200
Macaulay	"	" "	2	164	...	.....	1	64	....	.....
Medora	"	" "	3	203	...	.....	1	203	....	.....
Monck	"	" "	....	.....	...	.....	....	.....	....	.....
Morrison	"	" "	6	1,007	1	25/100	4	553	3	120
Muskoka	"	" "	....	.....	4	111	....	.....	5	225
McLean	"	" "	1	134	1	34	1	134	4	500
Oakley	"	" "	2	185	1	3	1	85	3	280
Ridout	"	" "	1	199	1	6	1	199	3	267
Ryde	"	" "	5	701	...	.....	4	601	....	.....
Sherborne	"	" "	2	145	1	14½	1	55	3	360
Sinclair	"	" "	1	228	2	28	1	228	....	.....
Stephenson	"	" "	....	.....	...	.....	....	.....	....	.....
Stisted	"	" "	2	287	...	.....	1	100	1	200
Watt	"	" "	3	309	1	1	2	200	4	220
Wood	"	" "	3	479	4	17	5	779	6	675
Blair	Parry Sound.	Miss I. M. Campbell, *	....	.....	1	19	....	.....	....	.....
Burpee	"	" Parry Sound	....	.....	...	.....	....	.....	....	.....
Carling	"	" "	5	654	3	205½	2	278	10	900
Christie	"	" "	2	200	...	.....	2	200	....	.....
Conger	"	" "	3	300	1	100	4	782	3	10
Cowper	"	" "	....	.....	...	.....	....	.....	1	4
Foley	"	" "	....	.....	...	.....	....	.....	1	20
Ferguson	"	" "	3	306	...	.....	2	200	....	.....
Hagerman	"	" "	1	202	...	.....	....	.....	....	.....
Harrison	"	" "	....	.....	...	.....	3	25¼	13	85
Henvey	"	" "	1	50	...	.....	....	.....	1	83½
Humphrey	"	" "	....	.....	...	.....	....	.....	....	.....
McConkey	"	" "	1	100	...	.....	....	.....	3	134
McDougall	"	" "	1	100	1	83	1	100	1	83
McKellar	"	" "	3	500	...	.....	2	400	....	.....
McKenzie	"	" "	....	.....	...	.....	....	.....	2	375
Monteith	"	" "	8	1,152	...	.....	5	717	1	254
Shawanaga	"	" "	....	.....	1	16	....	.....	4	32
Wilson	"	" "	3	386	1	3	1	98	1	200
Chapman	Parry Sound	Dr. J. S. Freeborn,	1	64	2	95	1	64	1	100
Croft	"	" Magnetawan	2	200	...	.....	3	404	1	200
Ferrie	"	" "	....	.....	...	.....	....	.....	....	.....
Gurd	"	" "	3	273	1	2	3	276	3	402
Lount	"	" "	2	300	...	.....	2	300	....	.....
Machar	"	" "	1	196	...	.....	1	99	6	860
Mills	"	" "	1	100	...	.....	....	.....	....	.....
Pringle	"	" "	4	500	2	107	1	200	4	695

Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Ryerson	Parry Sound	Dr. J. S. Freeborn, Magnetawan	....	.....	1	100	....	.....	4	479
Spence	"	" "	....	.....	...	.....	....	.....	1	200
Strong	"	" "	1	100	...	.....	2	299	4	480
Armour	Parry Sound	David Thaw, Emsdale	....	.....	1	8	....	.....	2	300
Bethune	"	" "	....	.....	...	.....	....	.....	....	.....
Joly	"	" "	6	792	1	108	7	891	4	580
McMurrich	"	" "	1	100	1	8	2	300	2	200
Perry	"	" "	1	109	...	.....	1	100	....	.....
Proudfoot	"	" "	1	91	...	.....	....	.....	....	.....
Hardy	Parry Sound	H. J. Ellis, Powassan.	....	.....	...	.....	....	.....	....	.....
Himsworth	"	" "	8	1,100	...	.....	6	911	7	1,186
Laurier	"	" "	4	603	...	.....	3	500	1	100
Nipissing	"	" "	3	483	...	.....	2	326	4	325
Patterson	"	" "	....	.....	...	.....	....	.....	1	186
Bonfield	Nipissing	W. J. Parsons, North	6	768½	1	11	4	368½	4	330
Boulter	"	" " Bay	3	350½	...	.....	3	250½	1	200
Chisholm	"	" "	14	1,666	2	14	11	1,132	5	685
Ferris	"	" "	6	559	...	.....	5	459	3	395
Anson	Haliburton	R. H. Baker, Minden	1	182	...	.....	1	182	1	100
Glamorgan	"	" "	....	.....	...	.....	....	.....	2	287
Hindon	"	" "	....	.....	...	.....	....	.....	1	98
Lutterworth	"	" "	....	.....	...	.....	....	.....	1	160
Minden	"	" "	....	.....	...	.....	1	100	....	.....
Snowdon	"	" "	....	.....	...	.....	....	.....	....	.....
Stanhope	"	" "	1	100	...	.....	1	100	....	.....
Anstruther	Peterborough	William Hales, Apsley	1	98	...	.....	....	.....	....	.....
Burleigh, N.D.	"	" "	....	.....	...	.....	....	.....	....	.....
" S.D.	"	" "	....	.....	...	.....	2	93	1	175
Chandos	"	" "	1	110	...	.....	....	.....	1	174
Methuen	"	" "	2	300	...	.....	1	100	1	200
Cardiff	Haliburton	A. N. Wilson, Kinmount	3	388	1	122	4	392	4	450
Cavendish	Peterborough	" "	3	348	4	62	2	224	....	.....
Galway	" ..	" "	1	125	1	17½	....	.....	2	117½
Monmouth	Haliburton	" "	4	333	1	7	5	420	3	369
Bangor	Hastings	W. J. Douglas, May-	3	268	...	.....	2	189	....	.....
Carlow	"	" "nooth	1	199	...	.....	1	100	4	277
Cashel	"	" "	1	100	...	.....	....	.....	1	200
Dungannon	"	" "	4	474½	...	.....	1	88	....	.....
Faraday	"	" "	2	203	1	¼	....	.....	1	66
Herschel	"	" "	6	639½	2	104	3	345	5	640
Limerick	"	" "	1	200	1	5	2	300	1	100
Mayo	"	" "	1	256	1	56	1	128	5	740
Monteagle	"	" "	1	101	3	7	....	.....	6	1,000
McClure	"	" "	2	200	...	.....	....	.....	1	97
Wicklow	"	" "	4	400	2	89	....	.....	2	247
Wollaston	"	" "	....	.....	...	.....	1	195	....	.....
Algona, S.	Renfrew	Adam Prince, Wilno	1	100	...	.....	....	.....	....	.....
Brougham	"	" "	....	.....	...	.....	....	.....	3	500
Brudenell	"	" "	6	590	...	.....	4	362	1	200
Burns	"	" "	....	.....	1	2	....	.....	2	56½

Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Grattan	Renfrew	Adam Prince, Wilno	....	.....	2	128	....	.....	2	128½
Griffith	"	" "	2	150	...	.....	....	.....	....	.....
Hagarty	"	" "	....	.....	...	.....	....	.....	1	50
Jones	"	" "	2	143½	...	.....	....	.....	2	200
Lyell	"	" "	3	250	...	.....	2	205	....	.....
Lyndoch	"	" "	....	.....	...	.....	....	.....	....	.....
Matawatchan	"	" "	1	100	...	.....	1	100	2	260
Radcliffe	"	" "	4	551	2	103	2	269	1	195
Raglan	"	" "	3	283	...	.....	3	410	2	325
Richards	"	" "	6	797	...	.....	4	401	4	400
Sebastopol	"	" "	3	285	...	.....	3	285	....	.....
Sherwood	"	" "	1	121	...	.....	2	171	1	87
Algona, N.	Renfrew	Finlay Watt, Pembroke	....	.....	...	.....	....	.....	1	100
Alice	"	" "	....	.....	...	.....	....	.....	5	475
Buchanan	"	" "	7	817	2	82	....	.....	2	200
Clara	"	" "	3	461	1	57	....	.....	....	.....
Fraser	"	" "	1	99	...	.....	1	100	1	55
Head	"	" "	2	196	...	.....	1	100	1	165
Maria	"	" "	....	.....	...	.....	....	.....	....	.....
McKay	"	" "	....	.....	...	.....	....	.....	....	.....
Petawawa	"	" "	5	472	...	.....	3	301	2	200
Rolph	"	" "	1	112	...	.....	1	100	....	.....
Wilberforce	"	" "	....	.....	...	.....	....	.....	1	170
Wylie (pt.)	"	" "	1	200	...	.....	1	100	1	100
Calvin	Nipissing	Robt. Small, Mattawa	2	212	...	.....	3	283	2	310
Cameron (pt.)	"	" "	13	1,466	...	.....	7	686	3	500
Lauder	"	" "	4	493	...	.....	2	292	....	.....
Mattawan	"	" "	1	100	...	.....	3	291	1	198
Papineau	"	" "	2	200	...	.....	3	300	1	111
Korah	Algoma	Edward Noble, Sault	....	.....	...	.....	....	.....	....	.....
Parke	"	" Ste. Marie	....	.....	...	.....	....	.....	....	.....
Prince	"	" "	1	160	...	.....	1	160	1	108
Aberdeen	Algoma	Thos. Dodds, Thessalon	....	.....	1	80	....	.....	7	580
" ad.	"	" "	....	.....	...	.....	....	.....	....	.....
Galbraith	"	" "	....	.....	...	.....	....	.....	2	318½
Lefroy	"	" "	....	.....	...	.....	....	.....	....	.....
Plummer	"	" "	....	.....	...	.....	....	.....	....	.....
" ad.	"	" "	....	.....	...	.....	....	.....	....	.....
St. Joseph Is'd	Algoma	W. E. Whybourne, Marksville	7	722	...	.....	7	733	7	826
St. Joseph Ch'nl Is'd	"	" "	....	.....	...	.....	....	.....	....	.....
Baldwin	Algoma	Edward Arthurs,	8	1,118½	1	157½	1	162	1	158½
Merritt	"	" Espanola	2	309½	...	.....	1	150	1	159½
Blake	Thunder Bay.	W. A. Burrows, Port	1	160	...	.....	1	160	....	.....
Conmee	"	" Arthur	3	400	2	133½	4	554½	6	600
Crooks	"	" "	....	.....	1	30	1	72	3	508
Dawson Road	"	" "	7	569	1	40	6	469	4	475
Dorion	"	" "	2	280	1	80	3	429½	5	625
Gillies	"	" "	1	80¾	...	.....	....	.....	3	465
Gorham	"	" "	2	223½	2	96½	1	160	7	950
Lybster	"	" "	....	.....	1	80	2	181	....	.....
Marks	"	" "	1	80	2	81¼	3	401	2	321½
McGregor	"	" "	3	457	3	66	4	616	1	2
McIntyre	"	" "	....	.....	1	10¼	....	.....	....	.....

Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
O'Connor	Thunder Bay.	W. A. Burrows, Port Arthur	1	162	2	4	1	162	3	478
Oliver	"	" "	3	481	...	.....	3	482	3	400
Paipoonge, N R	"	" "	1	100	...	.....	1	100	1	100
" S R	"	" "	....	.....	...	.....	....	.....	1	189
Pardee	"	" "	1	160	...	.....	....	.....	....	.....
Pearson	"	" "	3	354	...	.....	1	160	4	641
Scoble	"	" "	5	678	...	.....	4	558½	3	429
Stirling	"	" "	12	1,836¾	3	103¼	9	1,435	3	196
Strange	"	" "	....	.....	...	.....	....	.....	1	156
Ware	"	" "	3	480	1	63½	8	1,253½	8	950
Atwood	Rainy River..	William Cameron, Stratton	....	.....	...	.....	....	.....	....	.....
Blue	"	" "	5	430½	1	2	4	472½	2	243
Curran	"	" "	....	.....	1	2	2	322	1	162
Dewart	"	" "	....	.....	...	.....	....	.....	....	.....
Dilke	"	" "	....	.....	...	.....	....	.....	....	.....
Morley	"	" "	5	487	1	4	3	405	1	81
Morson	"	" "	12	1,685¾	4	284½	11	1,166¼	1	140
McCrosson	"	" "	4	479¾	...	.....	5	641¼	....	.....
Nelles	"	" "	2	239½	1	9	2	238	3	242
Pattullo	"	" "	4	406	4	167	3	322	3	488
Pratt	"	" "	3	381½	...	.....	1	40	1	160
Rosebery	"	" "	....	.....	...	.....	....	.....	....	.....
Shenston	"	" "	1	81	...	.....	1	81	1	155
Sifton	"	" "	4	561¼	...	.....	3	440¼	1	160
Spohn	"	" "	2	323	1	2	2	344	2	159½
Sutherland	"	" "	6	881	2	96¾	6	791¾	1	40
Tait	"	" "	2	164	2	8	2	246	1	164
Tovell	"	" "	3	498½	...	.....	3	357¾	5	880
Worthington	"	" "	....	.....	1	114	....	.....	....	.....
Aylsworth	Rainy River..	Alex. McFayden, Emo.	....	.....	...	.....	....	.....	....	.....
Barwick	"	" "	....	.....	...	.....	....	.....	....	.....
Burriss	"	" "	1	159½	...	.....	1	159½	....	.....
Carpenter	"	" "	2	223	2	100½	2	223	2	358
Crozier	"	" "	3	444	1	2	2	281	1	162
Dance	"	" "	3	514	1	2	6	1,029½	1	162
Devlin	"	" "	....	.....	...	.....	....	.....	....	.....
Dobie	"	" "	3	465½	2	27½	3	465½	3	413
Fleming	"	" "	....	.....	...	.....	1	160½	....	.....
Kingsford	"	" "	2	318½	...	.....	2	318½	1	40½
Lash	"	" "	1	81	1	2	1	81	1	162
Mather	"	" "	3	496½	1	79¼	2	336	2	159
Miscampbell	"	" "	4	656½	...	.....	4	596½	3	460
Potts	"	" "	4	638½	1	16	5	803½	1	176
Richardson	"	" "	2	319	1	80	2	368½	....	.....
Roddick	"	" "	....	.....	...	.....	....	.....	....	.....
Woodyatt	"	" "	....	.....	...	.....	....	.....	....	.....
Aubrey	Kenora	J. E. Gibson, Dryden	6	842½	...	.....	6	810½	4	485
Britton	"	" "	....	.....	...	.....	1	160½	....	.....
Eton	"	" "	4	547	1	80	3	400	6	960
Langton	"	" "	2	243½	...	.....	1	160	....	.....
Melgund	"	" "	....	.....	...	.....	3	476	2	60
Mutrie	"	" "	2	302½	...	.....	....	.....	3	415
Redvers	"	" "	2	359	...	.....	1	160½	....	.....
Rowell	"	" "	....	.....	...	.....	....	.....	....	.....
Rugby	"	" "	....	.....	...	.....	....	.....	....	.....
Sanford	"	" "	4	552	1	351¼	16	2,293½	3	400
Southworth	"	" "	7	744	...	.....	4	421	....	.....

Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Temple.....	Kenora	J. E. Gibson, Dryden..	....	.....	1	10	1	80	1	10
Van Horne ...	"	" "	2	316	1	80	2	316	3	160
Wabigoon	"	" "	1	160½	1	75¼	7	1,033¾	1	145½
Wainwright ..	"	" "	6	953½	...	.....	5	795¼	1	118¼
Zealand	"	" "	2	444½	5	270	5	763	6	276
Melick	Kenora	W. L. Spry, Kenora...	1	160	1	1	6	881	4	460
Pellatt	"	" "	1	110	1	36	4	519	1	125
Balfour	Sudbury.....	J. K. MacLennan, Sud-	....	.....	...	.....	1	159½	....	.....
Blezard	"	" " bury	1	160	...	.....	1	40	2	200
Broder.....	"	" "	2	268½	...	.....	1	114½	2	262½
Capreol	"	" "	1	163½	...	.....	1	163½	1	144
Chapleau.....	"	" "	....	.....	...	.....	....	.....	....	.....
Dill.....	"	" "	....	.....	...	.....	....	.....	1	160
Garson.....	"	" "	2	253½	1	88	1	160	1	248
Hanmer.....	"	" "	....	.....	...	.....	....	.....	....	.....
Lumsden.....	"	" "	3	323	...	.....	2	317½	....	.....
Morgan.....	"	" "	2	240	1	80	....	.....	....	.....
Neelon.....	"	" "	....	.....	...	.....	....	.....	1	157
Rayside.....	"	" "	....	.....	...	.....	....	.....	....	.....
Appelby	Sudbury	John Brown, Markstay	4	639½	...	.....	....	.....	....	.....
Casimir	"	" "	4	627½	1	7	1	160½	3	487
Dunnet.....	"	" "	1	161	1	1	....	.....	1	161
Hagar	"	" "	22	3,458½	1	160	12	1,891	3	462½
Jennings	"	" "	1	166½	1	1½	....	.....	....	.....
Kirkpatrick ..	"	" "	4	649	1	7	1	183½	1	120
Ratter	"	" "	5	814½	...	.....	2	320	....	.....
Caldwell	Nipissing	J. A. Philion, Sturgeon	2	320	...	.....	....	.....	2	231
Cosby.....	"	" Falls	2	319½	...	.....	....	.....	5	650
Grant.....	"	" "	3	452½	...	.....	1	135	....	.....
Macpherson ..	"	" "	....	.....	...	.....	....	.....	3	477½
Martland.....	"	" "	2	298	...	.....	3	455	2	309½
Springer	"	" "	3	340	...	.....	1	100	....	.....
Abinger.....	Lennox and Addington	Charles Both, Denbigh	2	196	...	.....	1	96	1	100
Canonto, S....	Frontenac....	" "	....	.....	...	.....	....	.....	....	.....
" N...	"	" "	....	.....	...	.....	....	.....	....	.....
Clarendon.. .	"	" "	....	.....	...	.....	....	.....	4	500
Denbigh.. .	Lennox and Addington	" "	5	681	...	.....	5	654	2	398
Miller (pt.)...	Frontenac....	" "	....	.....	...	.....	....	.....	....	.....
Palmerston	"	" "	....	.....	...	.....	....	.....	....	.....
McClintock ...	Haliburton....	Unattached	....	.....	...	.....	....	.....	....	.....
Airy	Nipissing.....	"	6	667	...	.....	....	.....	3	472
Finlayson....	"	"	5	64	6	74	....	.....	7	89
Murchison ...	"	"	4	388½	...	.....	1	200	1	41
Sabine	"	"	3	391	...	.....	....	.....	4	650
*O'Brien	Temiskaming.	"	29	2,535	...	.....	....	.....	....	.....
*Owens	"	"	10	990	...	.....	....	.....	....	.....
*Williamson..	"	"	2	194	...	.....	....	.....	....	.....
			576	72,420½	140	4,878⅓	425	55,278¼	431	49,685½

*Located under Returned Soldiers' and Sailors' Land Settlement Act, 1917

No. of lots assigned ..... 253 No. of acres assigned 34,123

By Special Regulations under Order in Council, dated 7th February, 1919, Returned Soldiers were permitted to acquire free grant locations or have their arrears due the Crown in respect of land for settlement purposes remitted, and the following list comprises the extent of such transactions.

In Sale Territory.

District.	Agency	Number Locations	No. arrears remitted	Total
Algoma	Thessalon	1	..	
Nipissing	North Bay	3	1	
"	Markstay	1	..	
Sudbury	Espanola	2	..	
"	Massey	1	..	
Timiskaming	Haileybury	2	1	
"	New Liskeard	1	9	
"	Elk Lake	1	..	
"	Englehart	9	7	
"	Matheson	23	30	
"	Cochrane	66	32	
Algoma	Hearst	24	10	
Peterboro	Unattached	2	..	
		136	90	226

In Free Grant Territory.

Thunder Bay	Port Arthur	4	..	
Parry Sound	Parry Sound	2	..	
Kenora	Kenora	3	..	
Nipissing	North Bay	1	..	
"	Unattached	1	..	
Rainy River	Stratton	2	..	
Sudbury	Sudbury	5	..	
Muskoka	Bracebridge	1	..	
Hastings	Maynooth	1	..	
Renfrew	Pembroke	1	..	
		21	..	21
				247

Appendix No. 14.—Concluded.

ISLANDS SOLD

Township	District or County	Agent	No. of Acres sold
Harrison: Parcels 4 & 5 of Island 1143a	Parry Sound	Miss J. M. Campbell, Parry Sound	10
Conger: Part Island B 90	"	" "	7.10/100
Shawanaga: Island C 389	"	" "	1½
Cowper: Island B 349	"	" "	3.70/100
Harrison: " 13a	"	" "	6.90/100
Carling: " C 372	"	" "	1.36/100
" " C 42	"	" "	1¾
" " C 23	"	" "	7.35/100
" " C 24	"	" "	5.15/100
Harrison: " 178	"	" "	15/100
" " 419	"	" "	1.02/100
Conger: " B 17	"	" "	1.80/100
" " B 19	"	" "	1.40/100
Shawanaga: Island 395a	"	" "	16.40/100
" " 987b	"	" "	16
Harrison: Parcel 6 of Island 96a	"	" "	9
" " 14 & 75 " "	"	" "	21
" " 2 of " 26a	"	" "	14
" Island 497a	"	" "	2.40/100
" " 516a	"	" "	60/100
" " 553a	"	" "	¼
" " 559a	"	" "	1.30/100
" " 557a	"	" "	90/100
Cavendish: Island No. 2 Catchacoma Lake	Peterborough	A. N. Wilson, Kinmount.	8
" Island No. 3 Catchacoma Lake	"	" "	16
" Island No. 4 Catchacoma Lake	"	" "	28
" Island No. 6 Catchacoma Lake	"	" "	2
Franklin: Vimy Ridge Island	Muskoka	J. B. Brown, Bracebridge	53/100
Watt: Balthayock	"	" "	6½
Sherborne: Pt. Denison Island, Hollow Lake	Haliburton	" "	14½
Morrison: Lalla Rookh Island	Muskoka	" "	1.27/100
Temple: Pt. Island 55, Eagle Lake	Kenora	J. E. Gibson, Dryden	10
Melick: Island N, Black Sturgeon Lake	"	W. L. Spry, Kenora	1
Nipissing: Pt. Island B, South Bay	Parry Sound	H. J. Ellis, Powassan	23
Macgregor: Island No. 17	Thunder Bay	W. A. Burrows, Port Arthur	2
			244

SELBY DRAPER, Free Grants Clerk.
W. C. CAIN, Chief Clerk.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 15.

Statement showing the number of purchasers and of acres sold; of lots resumed for non-performance of the settlement duties; and of patents issued in Townships other than Free Grant during the year ending 31st October, 1919.

Township.	District or County.	Agent.	No. of acres sold.	No. of purchasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Blount	Temiskaming.	S. J. Dempsay, Cochrane	.....	....	....	.....	....	.....
Brower	"	" "	135	1	2	295½	....	.....
Calder	"	" "	.....	....	....	.....	6	649
Clute	"	" "	1,653	13	13	1,920	5	780
Colquhoun	"	" "	.....	....	....	.....	....	.....
Fauquier	"	" "	1,984	14	4	599	5	863
Fournier	"	" "	.....	....	....	.....	1	158½
Fox		" "	1,116	8	10	1,589½	1	149½
Glackmeyer	"	" "	152	1	4	601	8	1,112
Kennedy	"	" "	151	1	1	150	....	.....
Lamarche	"	" "	168½	1	....	.....	2	319
Leitch	"	" "	289	2	1	145	....	.....
Newmarket	"	" "	638¼	6	3	470	....	.....
Pyne	"	" "	966½	7	2	319	....	.....
Shackleton	"	" "	501	3	....	.....	1	23½
Catharine	Temiskaming.	Jos. Woollings, Englehart	318½	3	4	625½	....	.....
Chamberlain	"	" "	158½	1	1	159	4	588½
Dack	"	" "	200	2	2	319	3	456
Eby	"	" "			1	37¾	1	373¼
Evanturel	"	" "	160½	1	2	317	1	161½
Gross	"	" "	319½	2	3	479½	....	.....
Ingram	"	" "	916	8	7	1,054	2	242
Marter	"	" "	480	3	1	160	3	350
Marquis	"	" "	3	1	....	.....	....	.....
Otto	"	" "	320	2	....	.....	4	241½
Pacaud	"	" "	360	10	1	159½	19	917½
Pense	"	" "	430¾	4	1	160	....	.....
Robillard	"	" "	45	2	1	161	6	918½
Savard	"	" "	161	1	3	481	3	467½
Sharpe	"	" "	159	1	....	.....	2	248½
Truax	"	" "	41	1	....	.....	1	162½
Armstrong	Temiskaming.	J. W. Bolger, New Liskeard	80	1	....	.....	6	716¼
Auld	"	" "	.....	....	....	.....	....	.....
Beauchamp	"	" "	468½	3	3	472	8	1,281½
Brethour	"	" "	687	5	1	158	5	784
Bryce	"	" "	160	1	3	480	2	317½
Bucke	"	" "	.....	....	....	.....	5	500½
Cane	"	" "	160	1	....	.....	4	479
Casey	"	" "	200	3	2	80	10	1,332½
Dymond	"	" "	.....	....	....	.....	4	558½
Firstbrook	"	" "	162½	1	8	1,249½	3	250
Harley	"	" "	.....	....	....	.....	9	1,174
Harris	"	" "	316¼	2	....	.....	6	684
Henwood	"	" "	962½	6	3	480	7	1,042
Hilliard	"	" "	784	5	....	.....	6	937
Hudson	"	" "	.....	....	....	.....	3	483½
Kerns	"	" "	.....	....	....	.....	12	1,238
Lundy	"	" "	.....	....	1	165½	....	.....
Tudhope	"	" "	.....	....	2	283½	5	204½
Smyth	Temiskaming.	Mark Morgan, Elk Lake	163½	1	....	.....	3	180¾
Lorrain	Temiskaming	Neil J. McAulay, Haileybury	201	3	2	319½	1	176

Appendix No. 15.—Continued.

Township.	District or County.	Agent.	No. of acres sold.	No. of purchasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Beatty	Temiskaming.	F. E. Ginn, Matheson	150½	1	3	247½	8	793¼
Benoit	"	" "	483½	3	7	828	5	161
Bond	"	" "	323½	2	11	1,768	1	1
Bowman	"	" "	160½	1	4	640½	3	375
Calvert	"	" "	251	2	1	140	4	243½
Carr	"	" "	670	4	6	817½	8	1,400
Clergue	"	" "	.....	....	3	486	5	223
Currie	"	" "	.....	....	2	322	4	423
Dundonald	"	" "	613	4	4	618	....	.....
Evelyn	"	" "	.....	....	....	.....	....	.....
German	"	" "	165½	1	....	.....	....	.....
Hislop	"	" "	760	4	2	387	2	172
Matheson	"	" "	.....	....	1	36	1	36
Mountjoy	"	" "	1,134½	8	4	603	2	76
McCart	"	" "	620	4	2	321½	....	.....
Playfair	"	" "	1,767½	12	4	638½	6	900
Stock	"	" "	.....	....	1	151½	1	144
Taylor	"	" "	317	3	....	.....	3	470½
Walker	"	" "	.....	....	....	.....	1	14
Casgrain	Algoma	T. V. Anderson, Hearst.	430	3	3	446	5	750
Eilber	"	" "	.....	....	....	.....	....	.....
Hanlan	"	" "	882	7	19	2,810	1	97
Kendall	"	" "	113	2	....	.....	6	710
Lowther	"	" "	595	4	2	302	....	.....
Forbes	Thunder Bay.	W. A. Burrows, Port	384	3	1	112	1	7
Lyon	"	" Arthur	161	1	2	320	3	291
Nepigon	"	" "	464½	4	13	1,981	8	1,224
Aweres	Algoma	E. Noble, Sault Ste. Marie	.....	....	....	.....	....	.....
Tarentorus	"	" "	80	1	....	.....	....	.....
Vankoughnet	"	" "	188	3	1	142	1	1.6/100
Watten	Rainy River	C. J. Hollands, Fort Frances	296	2	4	258	7	400
Bright	Algoma	Thos. Dodds, Thessalon.	.....	....	....	.....	....	.....
Day	"	" "	.. ..	....	....	.....	1	135
Gladstone	"	" "	.....	....	....	.....	1	156
Haughton	"	" "	.....	....	1	135½	4	472
Johnson	"	" "	289	1	....	.....	1	127
Kirkwood	"	" "	230	1	....	.....	1	230
Parkinson	"	" "	.....	....	2	83¼	2	83¼
Patton	"	" "	.....	....	....	.....	3	680
Rose	"	" "	.....	....	....	.....	1	154
Striker	"	" "	.....	....	....	.....	....	.....
Thompson	"	" "	.....	....	....	.....	....	.....
Wells	"	" "	.....	....	....	.....	....	.....
Drayton	Kenora	W. L. Spry, Kenora	160	1	....	.....	2	93
Hallam	Sudbury	R. W. Teasdale, Massey	974	6	....	.....	6	964
Harrow	"	" "	160½	1	....	.....	1	159½
May	"	" "	159½	1	....	.....	3	418
Salter	"	" "	.....	....	....	.....	1	160
Shedden	Algoma	" "	.....	....	....	.....	2	301½
Victoria	"	" "	102¾	1	1	160	3	220
Dowling	Sudbury	J. K. MacLennan, Sudbury	.....	....	....	.....	3	583
Scollard	Nipissing	J. A. Philion, Sturgeon	160½	1	....	.....	1	161½
Mason	"	" " Falls	162½	1	....	.....	1	2

Appendix No. 15.—Continued.

Township.	District or County.	Agent.	No. of acres sold.	No. of purchasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Hugel	Nipissing	John Brown, Markstay.	2,024½	15	....	.....	6	995
Widdifield	Nipissing	W.J. Parsons, North Bay	1,832½	12	9	1,313½	8	1,078
Nairn	Sudbury	Edward Arthurs, Espanola	.....	....	....	.....	....	.....
Admaston	Renfrew	Unattached	248	2	....	.....	5	654
Bagot	"	"	500	4	....	.....	7	1,800
Blithfield	"	"	290	2	....	.....	2	480
Horton	"	"	100	1	....	.....	....	.....
McNabb	"	"	100	1	....	.....	2	180
Westmeath	"	"	.....	....	....	.....	1	78½
Effingham	Lennox	Unattached	117	1	....	.....	....	.....
Kaladar	"	"	84	1	....	.....	3	310½
Sheffield	"	"	45	1	....	.....	3	200
Bentinck	Grey	Unattached	.....	....	....	.....	5	401
Derby	"	"	.....	....	....	.....	1	76
Egremont	"	"	.....	....	....	.....	3	200
Glenelg	"	"	.....	....	....	.....	5	404
Holland	"	"	30	1	....	.....	5	411½
Normanby	"	"	½	1	....	.....	1	½
Osprey	"	"	.....	....	....	.....	2	198¼
Proton	"	"	.....	....	....	.....	4	347½
Sullivan	"	"	.....	....	....	.....	3	250
Arran	Bruce	Unattached	.....	....	....	.....	4	243
Brant	"	"	.....	....	....	.....	....	.....
Bruce	"	"	.....	....	....	.....	8	523
Elderslie	"	"	.....	....	....	.....	5	583
Huron	"	"	.....	....	....	.....	3	200
Barrie	Frontenac	Unattached	67	3	....	.....	2	2
Olden	"	"	200	1	....	.....	1	200
Beckwith	Lanark	Unattached	.....	....	....	.....	....	.....
Darling	"	"	100	1	....	.....	1	100
Pakenham	"	"	200	1	....	.....	....	.....
Sandwich, E.	Essex	Unattached	$\frac{684}{1000}$	1	....	.....	1	$\frac{684}{1000}$
Haughton	Norfolk	Unattached	.....	....	....	.....	2	50
Rama	Ontario	Unattached	.....	....	....	.....	1	100
Carden	Victoria	Unattached	.....	....	....	.....	3	284
Dalton	"	"	.....	....	....	.....	....	.....
Laxton	"	"	.....	....	....	.....	1	100
Somerville	"	"	299	2	....	.....	2	251
Edwardsburgh	Grenville	Unattached	50	1	....	.....	1	50
Harvey	Peterborough	Unattached	145	2	2	144	3	535
Smith	"	"	.....	....	....	.....	1	100
Elzevir	Hastings	Unattached	61½	1	....	.....	....	.....
Grimsthorpe	"	"	224	1	....	.....	....	.....
Tudor	"	"	99	1	....	.....	4	367
Ashby	Lennox and Addington	Unattached	100	1	....	.....	....	.....
Sheffield		"	151	1	....	.	2	380

Appendix No. 15.—Continued.

Township.	District or County.	Agent.	No. of acres sold.	No. of purchasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Kitely	Leeds	Unattached	151	1	....	.....	1	151
Elizabethtown.	"	"	.....	.....	....	....	.....	1	100
Cornwall	Stormont	Unattached	145	2	....	.....	2	145
Roxborough	"	"	100	1	....	.....	2	200
Matchedash	Simcoe	Unattached	16	2	....	.....	....	.....
Arthur	Wellington	Unattached	.....	....	....	.....	1	100
Bertie	Welland	Unattached	42	4	....	.....	3	41½
Barton	Wentworth	"	69	1	....	.....	1	69
Cody	Temiskaming.	Unattached	¾	1	....	.....	6	183
Maisonville	"	"	1	1	....	.....	1	1
Bigwood	Sudbury	Unattached	17	1	....	.....	2	17
Burwash	"	"	319	2	....	.....	1	159
Creighton	"	"	.....	....	....	.....	4	313½
Dennison	"	"	323	2	....	.....	2	233
Drury	"	"	164	1	....	.....	1	80
Dryden	"	"	160½	1	....	.....	....	.....
Falconbridge	"	"	160½	1	....	.....	....	.....
Lorne	"	"	341	4	....	.....	1	167½
Louise	"	"	.....	....	....	.....	3	283½
McKinnon	"	"	248	2	....	.....	1	154½
MacLennan	"	"	.....	....	....	.....	1	35½
Shakespeare	"	"	161	1	....	.....	3	320½
Snider	"	"	.....	....	....	.....	7	330
Waters	"	"	402	3	....	.....	4	361
Badgerow	Nipissing	Unattached	1,452	11	1	160½	7	890
Crerar	"	"	1,248½	11	....	.....	10	1,480
Delamere	"	"	308	2	....	.....	....	.....
Field	"	"	1,033½	7	....	.....	6	561
Gibbons	"	"	665	4	....	.....	3	460
Malachi	Kenora	"	64	4	....	.....	3	41
Jaffray	"	"	.....	....	....	.....	5	538
McTavish	Thunder Bay.	"	160	1	....	.....	1	160
Townsites—								
Armstrong	Thunder Bay.	Unattached	½	2	....	.....	....	.....
Grant	"	"	8	2	....	.....	5	1
MacFarlane	Kenora	"	¼	1	....	.....	....	.....
Dryden	"	"	.....	....	....	.....	1	½
Sioux Lookout	"	"	.....	....	....	.....	1	¼
Waldhof	"	"	17/100	1	....	.....	1	17/100
Winnipeg River Crossing	"	"	¾	1	....	.....	8	23
Hearst	Algoma	T. V. Anderson	¼	1	....	.....	....	.....
Hilton	"	W. E. Whybourne,	19¼	20	....	.....	15	16¾

Appendix No. 15.—Concluded.

Townsites.	District or County	Agent.	No. of acres sold.	No. of purchasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented
Capreol	Sudbury	Unattached						
Frederickhouse	Temiskaming.	"	1	5			5	$1\frac{55}{100}$
Iroquois Falls	"	F. E. Ginn, Matheson						
Kirkland Lake	"	Unattached	1	3				
Smyth	"	"					3	$1\frac{3}{4}$
Muskokaville	Muskoka	J.B. Brown, Bracebri'ge	$\frac{1}{3}$	1			2	$3\frac{32}{100}$
Alma	Wellington	Unattached	1	1			1	1
Ayton	Grey	"	$\frac{1}{2}$	1			1	$\frac{1}{2}$
Petewawa	Renfrew	Finlay Watt, Renfrew.	2	17			10	$3\frac{83}{100}$
Bobcaygeon	Victoria	Unattached					1	$\frac{1}{2}$
		WATER LOTS.						
City & Towns: Kingston	Frontenac	Unattached	$2\frac{96}{100}$	1			1	$2\frac{96}{100}$
Sombra	Lambton	"	$\frac{35}{100}$	1				
Ford City	Essex	"					1	$\frac{684}{1000}$
Windsor	"	"	$\frac{2}{3}$	1			1	$\frac{2}{3}$
Keswick	York	"	2	2			2	2
Pembroke	Renfrew	"	$1\frac{12}{100}$				1	$\frac{12}{100}$
Belle Ewart	Simcoe	"	$\frac{1}{3}$	1			1	$\frac{1}{3}$
		ISLANDS.						
Burgess—Whiskey Is'd	Lanark	Unattached					1	$\frac{27}{100}$
Bastard—Kitchener Island	Leeds	"	$5\frac{1}{2}$	1			1	$5\frac{1}{2}$
Mink Island	"	"	$2\frac{1}{2}$	1			1	$2\frac{1}{2}$
Barrie—Pyne Island	Frontenac	"	1	1			1	1
Island in Shahbomekah Lake	"	"	2	2			2	2
Bedford—Bedford Is'd	"	"						
Ashby—Round Island	Lennox and Addington	"	$\frac{65}{100}$	2			2	$\frac{65}{100}$
Honeymoon Island	" "	"						
Matchedash—Island in Burrows Lake	Simcoe	"	1	1			1	1
Malachi—Island G	Kenora	"					1	$1\frac{3}{100}$
	Total		$49,864\frac{2}{5}$	414	208	$30,363\frac{1}{2}$	566	$55,078\frac{56}{125}$

Number of lots assigned.....312
Number of sales restored.....19

Number of acres assigned.....$44,201\frac{3}{4}$
Number of acres restored..... $2,703\frac{3}{4}$

W. R. LEDGER, Sales Clerk.
W. C. CAIN, Chief Clerk in Charge.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 16.

Statement of Crown Surveys completed and closed during the twelve months ending October 31st, 1919.

No.	Date of Instructions.	Name of Surveyor.	Description of Survey.	Amount Paid	No. in Acres
1	Sept. 7, 1917.	A. L. Russell....	Survey of the shores of Lower Shebandowan Lake, District of Thunder Bay	$756 90	
2	June 17, 1918.	Phillips & Benner	Survey certain boundaries of the Black Sturgeon Pulp and Timber Limit, District of Thunder Bay..	1,766 75	
3	Apr. 20, 1918.	H. J. Beatty.....	Survey of certain township outlines, District of Timiskaming..	1,117 05	
4	May 20, 1918.	David Beatty ...	Survey of the Township of Williamson, District of Timiskaming....	3,062 25	51,878
5	June 14, 1918.	E. R. Bingham...	Survey of certain base and meridian lines, District of Thunder Bay...	1,614 25	
6	June 26, 1918.	Lang & Ross.....	Survey of the Township of Cumming, District of Algoma	3,548 10	51,898
7	Nov. 19, 1918.	Lincoln Mooney..	Survey of a line dividing the Township of Wigle in the District of Sudbury into north and south halves	499 85	
8	Apr. 15, 1919.	M. E. Crouch....	To survey certain boundary lines of the Pic River Pulp and Timber Limit, District of Thunder Bay..	8,605 68	
9	May 16, 1919.	Lincoln Mooney..	To survey timber limits in the Timagami Forest Reserve, east of the Township of Askin, District of Nipissing.....	1,078 25	
10	Apr. 15, 1919.	Sutcliffe & Neelands	To survey certain township outlines in the District of Timiskaming..	7,618 23	
11	Apr. 15, 1919.	T. J. Patten	To survey a meridian line in the Districts of Kenora and Patricia.	3,723 88	
12	Apr. 15, 1919.	Speight & Van Nostrand	To survey certain township outlines on the Ground Hog River, Districts of Sudbury and Timiskaming	5,697 75	
			Scythes & Co., Ltd., iron posts....	575 00	
				39,663 94	103,776

L. V. RORKE,
Director of Surveys.

ALBERT GRIGG,
Deputy Minister Lands and Forests.

Appendix No. 17.

Statement of Surveys in progress during the twelve months ending October 31st, 1919.

No.	Date of Instructions.	Name of Surveyor.	Description of Surveys.	Amount Paid
1	May 16, 1919.	E. R. Bingham...	Survey of part of the Township of Devon, District of Thunder Bay	$3,320 00
2	July 8, 1919.	E. R. Bingham...	Survey outlines of certain townships west of the Townships of Marks and Conmee, District of Thunder Bay	2,700 00
3	Apr. 30, 1919.	David Beatty ...	Traverse certain lakes in the Timagami Forest Reserve, Districts of Nipissing and Sudbury	4,000 00
4	Apr. 15, 1919.	H. J. Beatty.....	Survey certain township outlines, north of Lake Abitibi, District of Timiskaming..	5,650 00
5	Apr. 15, 1919.	A. S. Code	Survey certain township outlines in the District of Algoma	4,000 00
6	May 2, 1919.	T. G. Code	Traverse certain lakes and rivers in the Districts of Sudbury and Algoma.....	3,440 00
7	May 8, 1919.	S. B. Code	Traverse the shores of Charleston Lake, Townships of Lansdowne and Escott, County of Leeds	1,350 00
8	Apr. 22, 1919.	Cavana & Watson	Survey certain township outlines, District of Sudbury	3,200 00
9	Apr. 15, 1919.	Jas. S. Dobie....	Survey a meridian line between the Districts of Thunder Bay and Kenora.....	11,900 00
10	Apr. 15, 1919.	J. W. Fitzgerald.	Survey a meridian line in the vicinity of the Ground Hog River, and the residue of the Township of Nansen, District of Timiskaming	4,550 00
11	Apr. 25, 1919.	C. E. Fitton	To inspect Crown Surveys	3,650 00
12	May 9, 1919.	D. J. Gillon	Survey a part of the boundary line between the Districts of Rainy River and Kenora, and certain meridian lines in Rainy River	4,900 00
13	May 8, 1919.	C. R. Kenny	Traverse Missinaibi Lake and River and tributary waters, Districts of Algoma and Sudbury	3,240 00
14	May 1, 1919.	Lang & Ross	Survey certain township outlines, District of Algoma	5,700 00
15	Aug. 6, 1919.	J. L. Morris	To re-establish part of the boundary of the Algonquin Provincial Park, District of Nipissing	2,500 00
16	Apr. 15, 1919.	McAuslan & Anderson	Survey certain townships in the District of Algoma	5,312 50
17	May 1, 1919.	N. B. MacRostie.	Survey certain township outlines on the Kapuskasing River, District of Algoma.	4,000 00
18	Sept. 30, 1919.	Phillips & Benner	Survey a meridian line and that portion of Dog Lake lying north of the Township of Fowler, District of Thunder Bay.....	500 00
19	Apr. 15, 1919.	Phillips & Benner	To survey the Township of Fowler, in the District of Thunder Bay	5,860 31
20	May 1, 1919.	G. L. Ramsey....	To survey certain base and meridian lines, District of Thunder Bay	4,586 50
21	June 30, 1919.	A. L. Russell....	Traverse the shore of Upper Shebandowan Lake and Green Water Lake, District of Thunder Bay	500 00
22	Apr. 15, 1919.	Wm. A. Sibbett..	Survey the residue of the Townships of Casgrain and Hanlan, District of Algoma.	2,500 00
23	July 22, 1919.	G. L. Ramsey ...	Traverse Long Lake, District of Thunder Bay	1,800 00
				89,159 31

L. V. RORKE,
Director of Surveys.

ALBERT GRIGG,
Deputy Minister Lands and Forests.

Appendix No. 18.

Statement of Municipal Surveys for which instructions issued during the twelve months ending October 31st, 1919.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Survey.
1	Geo. L. Brown	720	July 2, 1919.	To survey the road allowance between the 4th and 5th concessions of the Township of Williamsburg, across lots 10, 11 and 12, in said township, and that stone or other durable monuments be placed to mark the boundaries of the same.
2	H. J. Beatty..	721	Aug. 26, 1919.	To survey the road allowance between the 9th and 10th concessions across lots 1, 2 and 3 in the Township of McNab, and that stone or other durable monuments be placed to mark the boundaries of such road allowance.
3	James A. Bell & Son	722	Aug. 27, 1919.	To survey the boundary line between the Village of Port Stanley and the Township of Southwold, in the County of Elgin, and that stone or other durable monuments be placed marking such boundary and the intersections of the roads or streets running from the said village into said township.

L. V. RORKE,
Director of Surveys.

ALBERT GRIGG,
Deputy Minister Lands and Forests.

Appendix No. 19.

Statement of Municipal Surveys confirmed during the twelve months ending October 31st, 1919.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Survey.	Date when confirmed under R. S. O. 1914, Chapter 166, Secs. 10-15, Inclusive.
1	S. B. Code	717	June 4, 1918.	To survey the road allowance between concessions 5 and 6, in the Township of Goulburn, across lots 16, 17 and 18, and that stone or other durable monuments be placed to mark the limits of the said road allowance	Nov. 18, 1918.

L. V. RORKE,
Director of Surveys.

ALBERT GRIGG,
Deputy Minister Lands and Forests.

Appendix No. 20.

SURVEY OF CERTAIN TOWNSHIP OUTLINES IN THE DISTRICTS OF SUDBURY AND TIMISKAMING.

TORONTO, October 31st, 1919.

SIR,—We have the honour to submit the following report on the survey of certain township outlines in the Districts of Sudbury and Timiskaming, made by us during the past summer, under instructions from your Department, dated 15th April, 1919.

Upon receipt of the instructions, arrangements for the organization and equipment of the necessary party were begun, and, on the 15th of July, a party in charge of T. B. Speight, O.L.S., assisted by R. M. Anderson, O.L.S., was assembled at Kukatush on the Canadian National Railways. The following day part of the supplies was taken from there some distance down the Ground Hog River. Great difficulty was found, however, in obtaining sufficient men of the proper stamp for survey work, owing partly to the abundant opportunities for employment at points along the railways, and partly, to the high prices recently obtained for furs having rendered the Indians, who usually form a large proportion of the party, less inclined to supplement the proceeds of the hunt in this way. It was, therefore, the 18th of July before the survey was commenced, at the north-east corner of the Township of Muskego. The point of commencement had been reached the previous day by a good canoe route of about ten miles from the railway crossing at Winter Spawning Lake, a few miles west of the Ground Hog River. We found the north-east corner of the Township of Muskego marked by an iron post planted beside a wooden post, both of which were marked "1X M" on the south side, and "Muskego" on the south-west side. From this point we ran due east, astronomically, delimiting the south boundaries of the Townships of Melrose and Frey. We intersected the west boundary of the Township of Keefer at chainage seven miles and 3.07 chains from the south-west corner of Frey. Wooden posts of the most durable material obtainable within reasonable distance were planted at the end of every mile on each of the boundaries run, and were marked on the west side with the distance from the south-west angle of the township. In addition, iron posts, 1¼ inches in diameter were planted at the ends of the third and sixth miles in each case. Iron posts were also planted at the south-east corners of the townships, and both wooden and iron posts marked with the names of the adjoining townships.

From the south-east corner of Melrose, we ran eight miles and 73.92 chains due north between the Townships of Melrose and Frey, to O.L.S. Niven's base line of 1899. Wooden posts were planted at every mile, and iron posts at the third and sixth miles. At the intersection of O.L.S. Niven's base line, a wooden post and an iron post 1⅞ inches in diameter, both marked "Melrose" on the south-west, and "Frey" on the south-east, and "Eight miles and 73.92 chains" on the south side, were planted.

We then proceeded west to the 45th mile of O.L.S. Niven's line, which we found defined by an iron post and a wooden post marked "XLV M" on the east sides. We ran north, astronomically, from this point, three miles and 54.37 chains to the south boundary of the Indian Reserve surveyed by O.L.S. J. S. Dobie, in 1909.

Returning to the Ground Hog River, we proceeded down it to the north boundary of the Township of Strachan. O.L. Surveyors, Sutcliffe and Neelands had, earlier in the season, run this line from the north-west corner of the township, as far as the west bank of the Ground Hog River, and planted a post on that bank at two miles and 62.69 chains. We continued the line east from this point to chainage eight miles and 78.12 chains, where we planted iron and wooden posts to mark the north-east corner of the township. From there we continued east, astronomically, along the south boundary of the Township of Fortune, eight miles and 66.35 chains to the west boundary of the Township of Cote.

From the north-east corner of the Township of Strachan, we ran south, astronomically, one mile and 20.21 chains, to the north boundary of the Indian Reserve, which boundary we intersected at a point 6.98 chains east of post No. IV on that boundary. From the same corner we ran north, astronomically, nine miles along the east boundary of the Township of Montcalm to the north-east corner of that township.

It became evident at this time that it would be impossible to complete the work described in your instructions this season, owing to the trouble we had experienced and were experiencing in obtaining and holding men, so it was decided not to attempt to complete the north boundary of Montcalm or the lines to the north at this time, beyond doing what work was possible from our camp at this corner. Accordingly, after running two miles to the north, and two miles to the west, we proceeded to run the north boundary of the Township of Fortune to the Township of Byers. The west boundary of Byers was reached at chainage eight miles and 63.71 chains.

We returned to the railway via the Nat and Ground Hog Rivers, reaching the steel on the 16th of September.

All east and west lines were run as chords of the parallels of latitude, passing through the corners of the respective townships.

All lines were well opened up and properly blazed. Wherever possible, cairns of stone were built about the posts planted, and bearing trees, in each case, were carefully marked, with bearings and distances noted. Frequent astronomic observations were taken on Polaris throughout the survey. The notes of a number of these accompany the field notes.

General Features.

Practically all the area embraced by this survey lies in the valley of the Ground Hog River, and its tributary the Nat River. Generally speaking the country is rolling in the southern part, gradually becoming flatter to the north. Along the south boundaries of Melrose and Frey, the line crossed a succession of low to moderately abrupt sandy and gravelly ridges with a few outcrops of granite rock. Between Melrose and Frey, and north of O.L.S. Niven's base line, considerable stretches of flat land were crossed, varied in places by rock and gravel ridges. Few lakes were encountered, nor were any streams of any size crossed with the exception of the two rivers—the Ground Hog and the Nat. Large sections of the townships were burnt, apparently about twenty-five to thirty years ago, and more recent burns were crossed on the south boundary of Melrose, and on the south and west boundaries of Fortune.

Soil.

No clay soil was found on the south boundaries of Melrose and Frey, but on the boundary between Melrose and Frey considerable stretches were crossed. This boundary lies between the Ground Hog and Nat Rivers, and the ground was, generally speaking, flat and wet, with clay and sand sub-soil alternating. The section north of O.L.S. Niven's base line showed about 30 per cent. clay soil, most of it light and intersected by sandy ridges. Much of the land was swampy, but there was comparatively little muskeg, the only large muskeg crossed being at the south-east corner of Poulett.

Timber.

Much of this area has been burnt over within the last twenty-five or thirty years, but some good stands of timber were noted. The best timber seen was along the south boundary of Melrose on both sides of the Nat River, where there is a considerable area of exceptionally fine Banksian pine. In this area there are also some heavy stands of spruce of pulpwood size. Along the boundary between Melrose and Frey, the timber, mostly spruce, is generally light, with much balsam and undergrowth. Along the south boundary of Strachan; spruce, poplar, and birch, with occasional groves of Banksian pine, were found, and similar country was encountered as far as mile six of the south boundary of Fortune. Between miles six and seven there are some gravel ridges, which are heavily timbered with Banksian pine, birch, poplar, and scattered Norway pine. Here was the only place we found Norway pine, and at no place did the lines pass through stands of white pine. From mile seven eastward the timber has been burnt off leaving sand hills almost bare except for small groves of spruce and cedar.

Between Fortune and Parke there is a fair stand of spruce and Banksian pine, poplar, and birch, and the timber along the north boundary of Fortune is of the same general character.

Water.

The Ground Hog River supplies a good canoe route from the railway as far north as the north limit of the Indian Reserve. Several rapids and a fall of about fifteen feet are capable of supplying considerable power. From near the north limit of the Indian Reserve to well below the crossing of the north boundary of Strachan lie what are known as the Six Mile Rapids, practically continuous swift water.

The Nat River between the south boundary of Melrose and the Indian Reserve, is a sluggish stream with, generally speaking, low marshy banks. Bromley Lake and a large marsh to the south form considerable storage basins. From the Indian Reserve north, there are several rapids and small falls, but the river forms an excellent canoe route to the south boundary of the township of Aitken. The Nat may be reached from the Ground Hog River by several portages, of which the best is about five miles south of the south limit of Melrose.

Minerals.

The rocks seen were mostly granite, and the area does not look promising from a mining standpoint.

GAME.

Moose were numerous, and signs of bear and wolves were noted at various times. Beaver, too, were present in all streams. Pike and pickerel were plentiful in the Nat River, and sturgeon were found in the Ground Hog.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) SPEIGHT & VANNOSTRAND,

Ontario Land Surveyors.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto.

Appendix No. 21.

SURVEY OF CERTAIN TOWNSHIP OUTLINES IN THE DISTRICT OF ALGOMA.

NORTH BAY, November 19th, 1919.

SIR,—In accordance with instructions from your Department dated April 15th, 1919, we have surveyed certain township outlines in the District of Algoma, and beg to report thereon as follows:—

Commencing our survey at the north-east corner of the Township of Coderre on June 1st, we ran north astronomically nine miles between the Townships of Mons and Champlain; thence west astronomically to O.L.S. Speight's meridian line of 1910. Returning to our meridian, we proceeded across country to O.L.S. Speight's line of 1909, which had been run two miles between the Townships of Mons and Radisson. We produced this line west astronomically to intersect our meridian line. We then continued our meridian line north astronomically between the Townships of Ericson and Radisson and between Cromlech and Usnac, intersecting O.L.S. Speight's base line of 1910, forming the north boundary of Cromlech. From this point we ran the line between the Townships of Usnac and Opazatika east astronomically, returning to our meridian we ran north astronomically between the Townships of Abbott and Opazatika. Returning to the south-west angle of Usnac, we ran west astronomically to the Missinaibi River between the Townships of Ericson and Cromlech and east astronomically between the Townships of Usnac and Radisson to intersect O.L.S. Speight's meridian of 1909 forming the east boundary of Radisson; thence we ran north astronomically between the Townships of Usnac and Oscar and between Opazatika and Bourinot intersecting O.L.S. MacRostie's lines forming the north and south boundaries of the township of Oscar and posting these intersections, returning via Opazatika Lake and portage to the Missinaibi River we picked up our line between Ericson and Cromlech and continued it west astronomically to O.L.S. Speight's meridian of 1910, thus completing the survey.

A large portion, probably 40 per cent. of the eastern portion of the lands traversed by the survey, i.e., the Townships of Mons, Radisson, Usnac and Opazatika and the eastern part of the Townships of Champlain, Ericson, Cromlech and Abbott has been burned over within the last fifteen or twenty years and is covered with a very thick growth of small poplar and birch or spruce and jack pine and alder brush. With regard to the timber the balance of the land may be divided into two classes, i.e., the high land and the low land. The former being generally heavily timbered with white spruce, ranging from 5 in. to 24 in., birch, 5 in. to 16 in., and balsam, 2 in. to 16 in., with an occasional ridge of jack pine, chiefly with black spruce 4 in. to 14 in., and in some places cedar 5 in. to 20 in.

The lines dividing the Townships of Ericson, Champlain, Mons and Radisson indicate mostly sandy land with some areas of good clay land and occasionally a rock ridge. Generally speaking, the townships lying to the north of these are of good clay land, but slightly broken with rock ridges and swamps. Most of the swamps, however, could be drained and are of very fertile soil having from 18 in. to 30 in. of moss and black muck with a clay subsoil. Judging by the numerous varieties of wild fruits which grow abundantly in this country, it is very suitable for agricultural purposes.

No economic minerals were met with. The country rock is generally of a coarse-grained granite of the Laurentian Series, containing numerous veins of quartz and dykes of trap.

There are no water powers of any importance in the territory embraced by this survey, though the Missinaibi River throughout, has a very considerable fall.

Accompanying this report are the usual return of field notes, etc., together with mounted plan and timber plan.

All of which is respectfully submitted.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) McAuslan & Anderson,
Per H. M. Anderson.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 22.

Survey of Certain Township Outlines in the District of Timiskaming.

Pembroke, December 12th, 1919.

Sir,—I have the honour to submit the following report on the survey of certain township outlines in the District of Timiskaming made by me under instructions from your Department, dated April 15th, 1919.

On July 2nd, I left Pembroke with my party and proceeded via C. N. Railway and T. & N. O. Railway to Cochrane, thence via C. N. Railway to Low Bush Station where I arrived on the 5th about eleven o'clock and proceeded up Low

Bush River that afternoon and camped at the north boundary of Bowyer Township, about a mile and a quarter east of north-west corner of that township, that being the starting point of my first meridian, the survey of which was commenced on the morning of the 6th, and then run north a distance of fifteen miles in accordance with your instructions. At the sixth mile post I ran west along the north boundary of Findlay Township a distance of six miles, but owing to the north-east corner of the Township of Sweatman coming in open muskeg which has been frequently burned over, I was not able to locate it, and after searching for half a day, returned to the north-east corner of Findlay and ran east along north boundary of Henley Township. I then went down to the corner of Bowyer and Purvis Townships and ran north between Henley and Pliny intersecting my base line at five miles and seventy-eight chains and twenty-six links. I then continued east along north boundary of Pliny Township intersecting the west boundary of Steele Township one chain, thirty-seven and seven-tenth links south of its north-west corner.

I then packed my outfit across the north boundary to the north-east corner of the Township of Steele and ran the north boundary of the Township of Scapa, a distance of six miles, then went south to north-east corner of Bonis Township and ran the east boundary of Scapa north, intersecting my base line at five mile, seventy-eight chains and ten links. I then continued my base line, and established the corner of Abbotsford and Adair Townships at a distance of nine miles from north-east corner of Steele, from here I ran the line forming boundary between Abbotsford and Adair Townships north a distance of nine miles, and returning south to my base line I continued east intersecting the Quebec boundary at a point thirty-six chains and eighteen links north of the one hundred and third mile post. I ran the meridian forming west boundary of Abbotsford Township north from the north-east corner of Steele, a distance of nine miles and then turned east along north boundary of Abbotsford and at chainage eight miles plus seventy-nine chains and five links, I intersected the east boundary at seventy-nine chains and three links north of the eight-mile post. I then continued along north boundary of Adair Township intersecting the Quebec boundary at a point thirty-six chains and forty-five links north of mile post one hundred and twelve. I then packed down the Interprovincial boundary to my southerly base line which I followed west to the old portage on which I went south to the Okikodasik River where I had sent my canoes. We came down this river to La Reine Station on the Canadian National Railway.

Meridian lines were all run north astronomically and base lines east or west on chords of latitude. Wooden posts of the most durable material available, properly marked, were firmly planted at intervals of one mile with iron posts alongside, where shown on plan and in field notes, two bearing trees for each post were taken where available and stones were placed alongside posts when they were procurable within a reasonable distance.

All lines were well opened and properly blazed. Frequent observations for azimuth were taken, a number of which are recorded in the field notes, but owing to the magnetic needle on my transit being out of order, I have not obtained the magnetic variation.

The area embraced by this survey has a total depth of eighteen miles north and south and a breadth of forty and one-half miles east and west.

Soil.

Along the base and meridian lines run by me forming boundaries of Findlay, Henley and Pliny Townships, the soil is practically all clay with comparatively small swampy areas covered by deep moss, and the land is suitable for agricultural purposes, this also holds true with reference to my first meridian for a distance of about four miles north of my first base line. The remainder of this meridian is not good land, and on the northerly two miles the soil is mostly sandy with occasional granite outcrops.

Along the base and meridian lines forming boundaries of Seapa, Abbotsford and Adair Townships I do not consider the land suitable for agricultural purposes, about fifty per cent. being sandy soil and of the balance a considerable percentage is swampy.

Timber.

The timber throughout is principally spruce from four to eight inches in diameter with scattered areas of spruce, jack pine and poplar from six to ten inches in diameter, a fairly dense growth of underbrush covers the country generally.

A small area of jack pine up to fifteen inches in diameter is situated in the south-west corner of Abbotsford Township.

Old brule was found on the sixth mile of the north boundary of Findlay Township, on the second, third and fourth miles of the west boundary of Abbotsford Township and along the easterly three miles of the south boundary of Adair Township.

Fresh brule of 1919 origin was encountered on northerly thirty chains of my first meridian, the southerly limit of this fire apparently extended in a south-easterly direction for a distance of about two miles, that being as far as we could see from the high ground just west of the north end of this meridian. I can give no estimate of the distance it extended to the west. Fire also ran through the south-east corner of Adair Township this season, crossing south boundary just east of five mile post and extends southwesterly about two miles, while in a northeasterly direction it extended to Joe Lake, crossing Interprovincial boundary about mileage one hundred and seven.

On August 22nd, we saw smoke rising about three miles to the north of fifth mile post on north boundary of Adair Township.

Minerals.

No indications of economic minerals were noted.

Streams and Lakes.

Low Bush River is navigable by canoes from station of that name on Canadian National Railway to where it crosses north boundary of Findlay Township, there being three short portages in Boyer Township and one in Henley. Circle River is also navigable by canoes from Low Bush Station, the first portage being about a half mile south of north boundary of Pliny Township and I understand there is a long portage commencing about thirty chains north of this boundary. I understand that Mud River which runs along west boundary of Abbotsford is occasionally used as a canoe route but we did not use canoes there.

Patten or Woman River flowing through Township of Adair is a stream of considerable size, has its source in Province of Quebec and flows through Joe Lake near south-east corner of Adair Township, thence in a north-westerly direction crossing the north boundary of that township about one mile east of the north-west corner, where it is between three and four chains wide, but we did not use it as a canoe route. From Joe Lake there are two portages south to the Okikodasik River. The one crossing the south boundary of Adair near the five mile post is the shorter and is used by the Indians in high water, this portage is very wet and swampy; the other is the older and longer portage and crosses a high granite ridge and strikes the river about two miles lower down. The Okikodasik River is navigable by canoes from both of these portages to La Reine Station on the Canadian National Railway, there being five or six portages varying from five chains to thirty-five chains in length.

There are no water powers capable of development.

Game.

Game was very scarce, only a few moose being seen during the season, and only occasionally evidence of beaver noticed.

Generally speaking, the Townships of Findlay, Henley and Pliny appear to be suitable for agricultural purposes, with a fair amount of timber suitable for pulpwood. I do not consider the Townships of Scapa, Abbotsford or Adair suitable for agricultural purposes, but there is considerable timber of pulpwood size throughout these townships, but the streams practically all flow north.

Accompanying this report are a plan and field notes of the entire survey, with accounts in triplicate, and the customary affidavits.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) Herbert J. Beatty,
Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ont.

Appendix No. 23.

Traverse of the Shores of Charleston and Red Horse Lakes and of the Islands Therein.

Smith's Falls, November 10th, 1919.

Sir,—In accordance with your instructions dated the 8th day of May, 1919, to make a traverse of the shores of Charleston Lake and Red Horse Lake and of the islands in each, I have the honour to transmit herewith my report, plan on linen on a scale of 20 chains to the inch, field notes and affidavits, etc., in connection therewith.

After a few preliminaries, I commenced my survey of the traverse of the shore of Charleston Lake on the 3rd day of June, from an iron pin planted on Slack's Point, near the intersection of the 11th concession line with the shore. I ran easterly and southerly from this point to the outlet reach, and then came back and continued the traverse westerly and southerly to this same reach.

On the opposite shore from the iron pin at the outlet four feet above, which marks the height to which the Gananoque Water Power Company may hold the water in the lake, I established a bench mark, a cross in the rock, Station 123 of my traverse, which is seven feet and three inches above the iron pin.

The Power Company are entitled to keep the water four feet above the iron pin.

The astronomic bearing and distance of this bench mark from the iron pin is north 57 degrees 49 minutes east 73 feet.

On August 19th, I ran a line of levels from the shore of Donaldson's Bay in Charleston Lake, to the easterly shore of Red Horse Lake, following along the portage, and found the elevation of the water surface in Red Horse Lake to be 3.69 feet lower than the surface of the water in Charleston Lake.

I fixed a bench mark on a maple tree near the shore of Red Horse Lake, as shown by the notes, and also one on the rock surface, Station H, eight feet westerly therefrom.

As shown by the attached index there are 133 islands in Charleston Lake and ten islands in Red Horse Lake.

Most of the desirable islands in both lakes appear to be claimed by some person or other. The information furnished me on the ground was to the effect that Mr. Joe Banta, a wealthy American, owns several islands including Sheep Island, on which he has his summer home. I was unable to locate Sheep Island on the plan furnished me by the Surveys Branch, but concluded that the small one directly south of Orange Island must be intended for it. This is probably the most valuable island in the lake from the viewpoint of location, trees and timber, and general appearance. It was formerly the property of the late Walter Beatty, O.L.S. Mr. W. Parish, of Athens, is also the owner of several islands. He has his summer home on Little Bluff. Rabbit Island is partly cleared and cultivated, and the remainder is covered with second growth pines and other small timber. William Crozer appears to have squatted upon this island some years ago, cleared up part of the island, built a house and barns upon it, cultivated the cleared portion, and raised his family there.

I have divided the lower or southerly end of what was known as Democrat Island into two new numbered islands, viz., 11 and 12.

There was a separation by water from the mainland at the places shown on the plan to justify making separate islands of these two. J. Mulvenna, of Athens, has a cottage on the southerly end of No. 11.

I cannot find any islands in the lake to correspond with what is marked on the Department's plan as "Hobson's Choice." There are only five small islands in this locality; three of these, viz., Grape and Twin Islands are owned by Norman Dowsley, and "Heart's Delight" and "Happy Thought" by John R. Wemple. Bear Island near these is owned by E. Donovan, M.P.P.

As will be noticed by the plan the sideline between Lots 15 and 16 intersects the 10th Concession on the westerly shore of the lake.

I have renewed the high water mark cut on the rocky shore between Charleston and the Townline Road Allowance between Escott and Lansdowne, by Willis Chipman, C.E., some years ago.

I placed a water gauge on the wharf on Bertha Island at the commencement of my work, and from then, that is about the first of June until the 4th of September, the water had fallen by 2½ feet.

I have shown the principal shoals by a small cross for each on the plan.

I am also enclosing with my field notes and report, my diary, as directed in your instructions.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) S. B. Code,
Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 24.

Survey of Windy Lake, in the Townships of Dowling and Cascaden, District of Sudbury.

North Bay, May 27th, 1919.

Sir,—The survey of Windy Lake in the Townships of Dowling and Cascaden, performed under instructions from your Department of February 21st last, has been finished and we are sending you herewith our plan of the same and our report.

Governed by those instructions we ran a close inshore traverse of the lake, carrying continuous azimuth and station to station chainage.

The original survey lines were picked up at their shore intersections and marked at these points by iron posts, on which posts were carved the distinguishing lot and concession numbers. Certain other prominent points on the shore line were also marked by iron posts and these posts were consecutively marked "I.P.1," "I.P.2," etc.

No trace of the original line between Lots 2 and 3, Concession IV, Cascaden, could be found except on Green Island and at the mainland immediately north and south of it.

Islands were also tied into the traverse, and on each island a squared tree or stump was likewise marked "R.P." with a designating number.

The contact line between the Laurentian and the nickle eruptive series was delineated across the ice and for a distance of 10 chains on each side thereof soundings were taken at five chain intervals, while throughout the rest of the lake similar soundings were taken at ten chain intervals, east and west, by twenty chains north and south.

No traverse was made of the C.P.R. track, but a copy was made of the revised plan from the company's own survey and this is included in our returns. The track was tied in to our traverse at one point.

The level of the lake as at March 27th, 1919, stood at 1,106.7 feet above mean sea level, deduced from C.P.R. base of rail at Windy Lake Station, there

being no other available bench mark from their records. This base of rail elevation 1,233-0 is recorded in "Canadian Altitudes" last edition.

A profile of the soundings is also included showing the depths of these soundings except those along the contact line, and indicated from west to east by consecutive numbers and each line is indicated alphabetically from north to south.

An imaginary base line was run from point number 2 on the traverse south astronomically and the numbers are indicated by a plus sign if to the east of that line and by a minus sign if to the west.

Field notes are included showing the length and azimuth of each course, the stations being numbered consecutively from 1 up. Shore offsets are shown together with ties to all the iron reference points.

We trust all returns may be found in order.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) McAuslan & Anderson,
Per H. M. Anderson.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 25.

Survey of Lower and Middle Shebandowan Lakes.

Port Arthur, March 22nd, 1919.

Sir,—I beg to report as follows on the survey of Lower and Middle Shebandowan Lake undertaken in accordance with your instructions of September, 1917, for the purpose of ascertaining the area of the lake, the contour of the shore line and islands therein.

As previously reported the very early advent of winter and unusually stormy and wet weather rendered it impossible for me to continue the field work without serious loss and impairment of efficiency. Micrometer work was consequently abandoned, as approved by your Department, and survey resumed with stadia measurements in the following spring on the ice.

As you will notice by the field notes every detail in the shore line has been carefully outlined—the number of measurements being in excess of the actual requirement of the instructions. The chief difficulty lay in tracing out the lines and posts of the old Mining Location Surveys, an especially difficult matter when the snow is deep. Many could not be found. Their proper position on the map can, however, be readily approximated by the interaccordance of the two outline surveys. Hereafter an explorer or prospector will find no trouble, by means of this map, in locating his find so that the area intended will be distinctly evident and the work of the Department likewise greatly lightened. Delay in making out the more than usually intricate set of field notes and plan occurred by my

appointment as Registrar for this District under the "Canada Registration" Act, also as supervisor for the subsequent "Resources Committee" work. The urgency of "winning the war" tempted me to undertake these responsibilities. The loyalty of this District becomes conspicuous when I state that, with the exception of only three specially avidious workers, the numerous deputies and other officials volunteered their services free of cost. Another unfortunate delay was caused by the accidental omission by one of my assistants to record one of the larger (5 chain) stadia rod divisions, causing a break in the survey, which was not found out and corrected until much time and labour had been expended.

I discovered amongst the effects of the late S. J. Dawson, C.E., of Dawson Route fame—a large (800 foot to an inch) plan of Shebandowan Lake, being a trigonometrical survey made by the then (1869) Department of Public Works of Canada. This plan is very unsatisfactory and highly erroneous in many places but the long distance trig. measurements afford a good check on the stadia and micrometer survey. The extremes in sixteen miles apparently coincide very closely with my plotting, as you will observe on comparing the reduction to 20 chains to an inch, which I made and forwarded with my original plan—the original is available if desired.

As over sixty-two (62) islands, many very small, had to be surveyed and tie lines run to them, the work occupied more time, both in the field and office than was anticipated.

The total mileage of shore line of main land was:—

Mainland	68.30	miles
Islands (shoreline only)	14.17	"
Total	82.47	"

The results of observations and stadia and micrometer comparisons are shown at various intervals in the field notes. There is a small dam at the outlet of Shebandowan Lake to assist in lumbering operations. Its height is necessarily limited—a further increase would endanger the National (C.N.O.R.) Railway roadbed besides affecting mining and summer resort properties. In future patents it might possibly be well to guard against any claims which might arise from a slight increase in level for hydro-electric storage purposes.

I have the honour to be, Sir

Your obedient servant,

(Sgd.) ALEX. L. RUSSELL,
Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 26.

SURVEY OF BASE AND MERIDIAN LINES IN THE DISTRICT OF THUNDER BAY.

FORT WILLIAM, ONT., January 23rd, 1919.

SIR,—I have the honour to submit the following report on the survey of base and meridian lines in the District of Thunder Bay, carried out under your instructions dated the 14th of June, 1918.

Before the receipt of my instructions I was notified that this was to be a cruising proposition as well as a survey, and was instructed to find a cruiser. I spent at least two weeks endeavouring to secure a satisfactory man for the work. I hired two men for this purpose, but both cancelled the arrangements made, one two days before the date set for leaving, after shipping arrangements and connections for the men had been made. In this awkward situation I was fortunate in engaging at the last moment so desirable a man as Mr. Ben Howson for the work.

Immediately after receipt of my instructions I proceeded to Whitefish Lake with a small party, located my starting point, took an observation for azimuth and carried the line across Whitefish Lake. It will be noted that the line strikes at the mouth of Sucker Creek, which flows in from the west, and not on the headland as shown on the compiled plan accompanying the instructions. Several of the lines strike points considerably different and at different distances from those shown on this plan, particularly on the boundary waters.

Returning to the city I completed the organization and equipment of my party, and proceeding once more to Whitefish, had my party and outfit taken down the lake to a point convenient to Sucker Creek. From this point the line was carried south in accordance with the instructions.

The country was so mountainous, however, that it was impossible to move the whole outfit along the line, particularly with the men available, and I made arrangements to have the outfit and party moved back up the lake to the Old Pigeon River Lumber Company's tote road. A raft was built and horses brought across the lake, and a waggon hauled through the water close to shore from a point some two or three miles above the road. The whole party was then set to brushing out the road, laying corduroy, re-building bridges, etc., and the outfit was hauled to old Pigeon River Company's Camp 3, where we camped for some days.

The line work was then proceeded with according to instructions, but throughout the first half of the survey the country was so rough that nearly all moving was done along the old trails which I opened up, in many instances at considerable distances from the work, involving long walks and lost time and slow progress.

Labour conditions were such, both as to the securing of men and getting them to camp—owing to the phenomenal wages then being paid in Fort William on war work being done on a percentage basis, and which eventually proved a disturbing factor in labour conditions from coast to coast—and the keeping up of camp supplies in the rough country with the shortage of men who could pack anything was becoming such a serious problem, that I engaged the services of Mr. John Shaw, O.L.S., to assist me in the work, when about half was completed.

From this time I devoted myself more particularly to securing bushmen and the forwarding of supplies, but even so, only for a very short time were there

enough men available to run double party.

The weather throughout was exceptionally fine, and was possibly responsible for the comparative absence of fly pests. On the other hand, in a rocky, hilly country, continued dry weather made the water problem serious, and it became necessary to procure closed vessels to carry water along the line for use during the day and at meal time.

Before commencing the work the chainmen were well posted in their work, but frequent change of the front chainman after the original man gave out through exhaustion made constant watchfulness and checking necessary.

The lines will be found to be well opened, well blazed, and with large well marked posts planted throughout, and bearing-trees well chosen and marked where such were at all available.

All points required by the instructions were marked by iron posts, except at Mountain Lake. A raft broke up on the Arrow River, and this post with other things was lost. At this point, however, I personally constructed a stone cairn almost as high as the post, and in a well protected position.

The traverse of the part of the south shore of Whitefish Lake was left by arrangement to be done on the ice. An attempt was made to carry out this work during the week before Christmas, but owing to the peculiar winter weather, including heavy rain, this had to be abandoned, and this work was only recently completed.

Watch was kept for signs of old survey lines throughout the progress of the work, but at only one point were lines and post found. Connection was made, however, at the termination of all lines where such existed with international or township boundaries.

Observations for azimuth were taken at least once on each line. Observations on the sun for time were frequently taken.

Soil.

All lands of an agricultural nature are shown on the plan of survey coloured brown. These areas are carefully plotted not only from the field notes of survey, but from the observations made by the cruiser. The greater part of the lands passed through or cruised are totally unfit for agriculture, being mostly rock, sometimes bare, but usually with a shallow covering of leafy loam.

The agricultural land referred to consists mostly of clay, white to light brown in colour, and clay loam. Except in some wet areas there is not heavy moss. As the hills are approached stones and boulders are met in increasing quantities. Frequently in the larger clay area patches were seen several acres in extent where fires had removed most of the timber, and very little clearing was necessary before ploughing could be done.

In some of these patches and along the old tote roads clover and timothy grew spendidly.

Minerals.

The rock throughout the greater part of this country is granite, hornblendic rocks being found in the south, while east of South Fowl Lake there is considerable showing of low grade iron. The variation of the compass going round the sharp point on the south shore of Whitefish Lake near its east end, differences of 25 deg. being noted in going half a mile round the point, would indicate bodies of iron ore.

Timber.

This whole country has been lumbered over at a comparatively recent date. Nearly all of it shows signs of having been burnt over at some period. There is practically no valuable timber apart from what is now being taken out immediately south of Whitefish Lake. There are odd clumps of trees to be met with, at one or two points considerable parcels of white pine, as on the range of hills south of the first mile of the line running west to South Fowl Lake, but these are usually so situated as to make their removal a losing proposition, though in the future, settlers may find it worth while to cut and remove for their own use.

The country is covered principally by small birch and poplar. On the first meridian immediately south of the Arrow River is a small area of spruce that would make pulpwood were it more accessible and of a larger area.

Game.

There was seen but little trace of the small fur-bearing animals, mink, marten, etc., but bears are very plentiful, as are moose; there were some red deer seen. Beaver are the principal occupants of the region, in fact, not a member of the party had seen them so plentiful elsewhere. At nearly every point where there was enough water available beaver dams were to be seen: at times several, one above the other, on the same stream. There are beaver houses along the Arrow River. In fact, the one thing the westerly part of the territory is suitable for is a game preserve.

There are numerous trails throughout the country covered, opened up originally by the various lumber companies who have operated here. Most of these have grown up considerably with brush, and are obstructed by fallen logs, but should it be decided to lay out the agricultural area for settlement a little attention would make these available for the first needs of the settler, the South Fowl Lake Road and the road north of the Arrow River as far as the dam in particular, requiring little to make them at least travelable: in fact, they were both travelled this last summer, but would be better for some attention in the wet spots.

The "Hospital" bridge, over which the former road crosses the Arrow River, is still in fair condition, and well worth taking care of.

I am forwarding herewith field notes of survey and lake traverse, plan of survey, plans of traverses, timber plan, affidavits, etc., and trust that everything upon inspection will be found satisfactory.

All of which is respectfully submitted.

I have the honour to be, Sir

Your obedient servant.

(Sgd.) E. R. Bingham,
Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 27.

SURVEY OF A MERIDIAN LINE IN THE DISTRICT OF KENORA.

LITTLE CURRENT, ONT., October 1st, 1919.

SIR,—I have the honour to submit to you the following report on the survey of a meridian line in the District of Kenora under instructions from your Department dated Toronto, April 15th, 1919.

I commenced the work on the 12th of June at the iron posts at the north-west angle of the Township of Rowell, as directed, with a party of 18, composed of 9 from this vicinity and 9 from the Lac Seul country. My intention was to add to the party, Indians, as guides and canoemen, after crossing Lac Seul, and for which I had arranged with the Hudson's Bay Co.

Owing to the Winnipeg strike which interrupted seriously the transportation of supplies on the Canadian Government Railways, I was unable to proceed earlier with the work.

The line was continued to the north shore of Lac Seul, a distance of 33 miles and 5 chains, which point was reached about the 10th of July. Here the Indian packers from the Lac Seul country refused to proceed any further—three of them had deserted some miles back—and of the canoemen and guides arranged for only three arrived. They also intimated that they could remain only a few weeks. An effort was then made to obtain more help at the Lac Seul and Pine Ridge posts, but hardly any good men appeared to be available. Finding, therefore, that I would probably not be able to proceed much farther this season, and being much broken in health, I concluded to discontinue the work for the time.

At the end of each mile a wooden post 6 inches square, of the most durable wood convenient was planted and marked on the south side the number of miles, as 1 M., etc., from the initial point. In addition to this at the end of every third mile an iron post 1¼ inches in diameter was planted beside the wooden one and similarly marked. Where a mile came in a lake a post was planted on the nearest shore and the miles and chains marked on it. Two bearing trees were also marked at every post, all of which was duly entered in the field notes.

The line was well blazed in the usual way—a blaze on the side of the tree facing the line and on the north and south sides of it.

Frequent observations of Polaris were made to check the bearing of the line which was projected north astronomically.

The first mile is mostly large timber, the swamp areas containing much black spruce and some cedar, and the higher ground jack pine, poplar and balsam.

From the 2nd to the 16th miles the country is principally brule, on the high land, with a growth of jack pine, birch, spruce, balsam and poplar about 3 inches in diameter. In the lower tracts which escaped the fire there is considerable black spruce up to 12 inches in diameter. Between Ord and Miller Lakes, in the 6th mile, there is big green timber. From the 16th mile to the end of the work it is mostly big timber of the same kind and quality. In many places there is some good cedar.

The entire country traversed appears to be red granite and destitute of mineral.

Rocky ridges with sand, boulders and gravel interlying are the main features up to the 17th mile where the south cove of Lac Seul was intersected. From

the 17th mile to the end of the line there is considerable clay land and probably a sufficient area of it might be found fit for farming settlements.

I enjoined on every member of my party the necessity of great care being exercised in order to prevent fire.

Moose and deer abound, also the smaller game, and fish.

I have the honour to be, Sir

Your obedient servant,

(Sgd.) T. J. Patten,
Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 28.

Survey of the Black Sturgeon River Pulp and Timber Limit, in the District of Thunder Bay.

Port Arthur, Ont., December 9th, 1919.

Sir,—We beg to report that in accordance with your instructions dated June 21st, 1918, we have completed the survey of the south boundary, west boundary and part of the north boundary of the Black Sturgeon River Pulp and Timber Limit.

This survey was commenced from the north-west angle of the Township of Hele, where an iron post 1¾ in. in diameter and a cedar post were planted by M. E. Crouch, O.L.S., in 1916. From this point the south boundary was run west astronomically a distance of thirty miles, fifty-one chains and twenty-one links to the south-west angle of the limit. This line was run in chords of six miles, with reference to a meridian through their central points, the deflections being made at the 7th, 13th, 19th and 25th miles. The west boundary was run north astronomically, from the south-west angle, a distance of twenty-eight miles to the north-west angle of the limit. From the north-west angle the north boundary was run east astronomically a distance of twenty-one miles, eleven chains and forty links to intersect the high water line of McIntyre Bay of Lake Nipigon. This boundary was run in chords of six miles with reference to a meridian through their central points, the deflections being made at the 6th, 12th, and 18th miles. A careful stadia traverse was made of the shore line of McIntyre Bay from the point where our line intersected it to the west boundary of the Township of Innes. Frequent astronomical observations were taken to verify the accuracy of the direction of the line.

Wooden posts were planted according to instructions, the first post on the south boundary being planted at chainage fifty-one chains and twenty-one links and this chainage was marked on the post. Thereafter posts were planted at intervals of one mile, the next post being marked "2M" and so on to the 31

mile post. The posts on the west boundary were marked from 1 to 28 from south to north and on the north boundary from 1 to 21 from west to east, the final post being marked "21M 10 chains" and being planted at the chainage. Iron posts $1\frac{1}{4}$ in. in diameter were planted at intervals of three miles from east to west on the south boundary, from south to north on the west boundary and from west to east on the north boundary. Iron posts $1\frac{3}{4}$ in. in diameter were planted at the south-west and north-west angles of the limit and a chainage 21M 10 chains on the north boundary. These posts were all marked with the mileage at which they were planted.

The ends of the 21st and 29th miles on the south boundary and the 13th on the west boundary came in places where it was impossible to plant posts. The first two being in lakes, the posts were planted on the nearest shores. In the third instance the mile point came on top of a large boulder and the post was moved forward. These posts were marked with the chainage at which they were planted.

Survey Lines.

The only line established by an Ontario Land Surveyor encountered was a meridian run by A. H. Macdougall, in 1903. This was intersected by our south boundary at chainage 6M 51.805 and the distance to the nearest mile post was ten chains and thirteen links to the south, the post being marked "XIV M." This line was also found at its intersection with McIntyre Bay, or the closing point of our survey.

Other lines found were numerous trial lines surveyed by the Canadian Pacific Railway Company, about eight years ago, in an endeavour to locate suitable grades for a railway from Nipigon to Savanne. The direction of these lines was not noted but the chainage of those intersecting our lines are indicated in the field notes.

Topography.

The region in the vicinity of the Black Sturgeon River is very rough, the river valley being about four hundred feet deep with summits from twenty chains to three miles inland. For two miles after crossing Sucker Creek the land is fairly level and from here west to the Spruce River is a very rough broken country with hills from fifty to three hundred feet high. The land along the west boundary is not rough but has a continual slope to the north. There would be a drop of about six hundred feet in this line. On the north boundary from the Poshkokagan River to the north-west corner of the limit there is a slope to the east. East of the Poshkokagan River to the portage from Lake Nipigon to Black Sturgeon Lake is fairly level and from the portage east to the twenty mile post is a high rocky country the slope being to the south. East of the twenty mile post is nearly level.

Soil.

On the south boundary the best soil found was from about the 3rd mile post to the 6th mile post. This graded from sandy loam at the east to a red clay loam on the west. The subsoil is clay. West of here to the Spruce River the country was nearly all rocky and the soil either light or very stony. West of the river good land was again found. This area extended from the 25th mile to the 28th and is nearly all a sandy loam. On the west boundary good

soil was found along the greater part of the line. The best areas are from the corner to the 10th mile post and from the 17th mile to the north-west corner and of these areas the first mentioned is probably the better since in the latter there is a considerable area of swamp land. Between the 10th and 17th miles the soil, though good in places is mostly rocky. On the north boundary good land was found from the north-west corner to the eleventh mile and east of this to the 20th mile is mostly all rocky. The remaining part is fairly good though rather stony.

Rock Formation.

The predominant formation is diabase. Intrusions of the red stones of the Nipigon Formation were observed in places. Banded granite was found in the hills east of the Spruce River. No minerals of economic value were found.

Timber.

The country within the limit is nearly all well timbered, the only burned over area observed being between the 11th and 15th miles on the north boundary. This was burned in 1917 and nearly all the timber was destroyed. A fire of considerable extent has passed over portions of the limit about forty years ago. The second growth timber on these portions extend from the 19th mile to the 26th mile on the south boundary, from the 11th mile to the 21st mile on the west boundary (areas of large timber intruding in places here), and from the 10th mile to the end of the line on the north boundary. In these areas the young growth on the higher lands is mostly birch, spruce, jack pine and poplar, the amount of each being in the order mentioned. On the low land the predominant species is spruce. The average size of the timber would be about four inches. The remaining portions of the line are well timbered with spruce, birch, poplar and jack pine with considerable balsam. The average size would be between seven and ten inches. The spruce is the species occurring most often in the blocks of any value. The largest areas of this species on the south boundary are between the 3rd mile and the 6th mile and between the 26th mile and the south-west corner. Here the timber is very suitable for pulpwood on the lower land and on the high land for logs and piling. On the west boundary good spruce is found from the south-west corner to the 11th mile. This is larger than that on the south boundary but there is a considerable amount of it blown down by wind. From the 21st mile to the northwest corner is a better stand, this area containing many swamps where spruce is the only species found. On the north boundary it extends from the north-west corner to about the 10th mile and here the best spruce was found. There appeared to be a very large area of spruce swamps to the north of the line here and also extending to the west for several miles. Two areas of jack pine were noticed, the first being from the 5th mile to midway between the 6th and 7th miles on the south boundary and the second along the 17th mile on the west boundary. No white pine of value was seen.

Routes, Waterways, etc.

The main rivers draining the Limit are the Black Sturgeon, Nonwatin, Spruce and Poshkokagan. The Black Sturgeon is the outlet of the Nonwatin and Spruce and is the most important one. It is navigable by canoe at all seasons and would require very little improvement for driving timber. The

Spruce is very shallow and can be used to advantage for canoeing only in the early summer months. It was necessary for us to use it, however, and from Little Sturgeon Lake to the south boundary of the limit between twenty and thirty portages were cut out. The Spruce is joined by a smaller stream, the Eaglehead River about eight miles from the south boundary. The Poshkokagan River appears to have a greater flow than the Spruce. It was only used from Chief Bay to the north boundary of the limit (about ten miles) and in this distance there are only two portages and both are short. The portages further up the river are well cut out and are used by Indians in the spring.

Black Sturgeon Lake was made the supply base for the performance of the survey. Supplies were brought here via Lake Nipigon and were cached with the forest rangers. The main party was taken in via Black Sturgeon River and the first meet with the packers made at the Spruce River.

Water.

All water was free from alkali. The water in all the lakes was clear and clean while that in the rivers and small creeks was dark in colour but had no objectionable taste or odour.

Game.

Moose are plentiful in all parts and particularly near the Black Sturgeon River. No caribou tracks were seen but signs of deer were noticed on the north boundary.

Beavers are the most numerous fur bearing animals and nearly all creeks and lakes showed indication of their work. Bears are also numerous along the Black Sturgeon River but further in no signs of them were seen. The Indians report lynx, fisher, mink and fox in abundance, but rabbits, partridge and wolves are almost extinct.

The lakes and rivers are well stocked with fish, pike being the most numerous. Black bass are found in the Black Sturgeon River and in Black Sturgeon Lake. The waters tributary to Lake Nipigon are nearly all good trout streams.

The magnetic variation remained fairly constant at one degree and twenty-five minutes to one degree and thirty minutes.

The maps supplied by your Department were found to be very reliable in most cases as also were those of the Geological Department of the Dominion Government.

We have the honour to be, Sir

Your obedient servants,

(Sgd.) Phillips & Benner,

Per J. K. Benner.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 29.

SURVEY OF THE TOWNSHIP OF WILLIAMSON, IN THE DISTRICT OF ALGOMA.

PARRY SOUND, October 15th, 1918.

SIR,—I have the honour to submit the following report on the survey of the Township of Williamson, in the District of Algoma.

This township is bounded on the south by the Township of Owens, surveyed by O.L.S. Anderson in 1917, on the west by the Township of Idington, surveyed by O.L.S. Dobie in 1917-18, on the north and east by the unsurveyed Townships of Nixon and Teezel, respectively. The National Transcontinental Railway crosses the south boundary about seventy-six miles west of Cochrane near the corner of lots eleven and twelve, a short distance west of Secord Station, and bearing in a direction a little north of west, crosses the west boundary in the fourth concession. It is therefore well supplied with railway facilities.

I commenced my survey by chaining and posting the south boundary, making the lots the width shown in the field notes and from this boundary meridians were projected north astronomically in the centre of the road allowances, between lots six and seven, twelve and thirteen, eighteen and nineteen and between lots twenty-four and twenty-five.

The centre lines of road allowances between the concessions were run as chords of latitude making the depths of the concessions as shown on plan and in the field notes, the survey being carried on in accordance with instructions; the lines being well cut out and blazed and substantial wooden posts planted at the corners of the lots with guide posts in the centre of the road allowances between the concessions opposite the lot corners. Bearing trees were marked for all lot posts as recorded in the field notes. Iron posts were planted alongside wooden posts where directed and their location is shown on plan and recorded in the field notes. I endeavoured faithfully to carry on my survey throughout in accordance with my instructions and the results in detail are shown on the plan and recorded in the field notes. Frequent observations for azimuth were taken, the magnetic variation being about seven degrees and fifteen minutes west of north.

A road allowance one chain in perpendicular width was laid out on each side of the right of way of the Trancontinental Railway, on each side of Lost River and around the lakes shown. I made a careful traverse of Lost River, the course of which is very crooked, particularly in the first eight concessions, this stream has a considerable volume of water during spring freshets and early summer, and is navigable throughout by loaded canoes, but in August it became very shallow and had very little water in it so that we had difficulty moving our outfit up to the railroad, although canoes were not heavily loaded. That part of the river between lot fourteen, concession seventeen and the north boundary as well as that flowing through concessions eighteen to thirteen is obstructed with boulders in many places and must be rather turbulent in high water. I understand that the fire rangers travel up this river from the Kapuskasing to the railway. During August the water did not appear to be safe for drinking purposes without boiling.

TIMBER.

The township is thickly covered with timber and fire has run over about six per cent. of it, there being two small brules in the south-east corner, covering about four hundred acres, there is also between six and seven hundred acres

burned over in the south-west corner of the township and the largest area extends easterly from the west boundary in concession nine and covers an area of about two thousand acres. About fifty per cent. of the township is covered with spruce swamp with deep moss, the timber being from four to seven inches in diameter, the balance is principally spruce, poplar, balsam and white birch from four to twelve inches in diameter, the timber plan accompanying the report shows the different areas as accurately as could be ascertained during progress of survey. The largest timber being located east of Lost River, concessions one to six, inclusive.

Soil.

The soil generally is clay, about fifty per cent. of the area being covered with moss from six inches to two feet in depth and the balance with little or no moss. I estimate that about seventy-five per cent. is suitable for development for agricultural purposes but it will require considerable drainage, the highest area is along the railway and in the south-easterly portion of the township.

Minerals and Rock.

No indications of economic minerals were observed and comparatively few outcrops of rock were noted. A small quarry was opened on lot seventeen, concession three, on the east side of Lost River by the railway contractors. There are frequent rock outcrops in the bed of river in lots twelve and thirteen, concession eighteen.

Lakes and Streams.

Lost River varies in width from about one chain near the south boundary to one and one-half chains at the north and east boundaries. It has a good strong current during times of freshet and is rapid from concession seventeen to the north boundary and where it flows through the easterly part of township. Freshet level is about six feet higher than low water level and there are no falls within the limits of this township. There are only a few small lakes and they are shallow with low banks.

Fish and Game.

The fishing is rather poor but during June and July we caught a few fair sized pike in Lost River and Solomon Creek and I understand pickerel and pike are plentiful in some of the lakes, particularly in the one on lots nineteen and twenty, concession five.

Moose were very plentiful along Lost River.

In conclusion, I consider that about seventy-five per cent. of this township will be available for agricultural development, the timber being chiefly valuable for pulpwood. Summer frosts occurred throughout the season which was a cold one, in places we found that the frost did not go out of the ground this year.

Accompanying this report are a timber plan, general township plan, field notes, account in triplicate and the customary affidavits.

I have the honour to be, Sir

Your obedient servant,

(Sgd.) David Beatty,
Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 30.

SURVEY OF TOWNSHIP OUTLINES BETWEEN GROUND HOG AND KAPUSKASING RIVERS, IN THE DISTRICT OF TIMISKAMING.

NEW LISKEARD, ONT., August 30th, 1919.

SIR,—Under instructions to us from Mr. L. V. Rorke, Director of Surveys, bearing date April 15th, 1919, our Mr. Neelands proceeded to Foleyet on the Canadian Northern Railway, May 19th, and personally conducted the survey up to the time of its completion, July 10th. The party was supplied and outfitted by Mr. Henry Charron, Foleyet, and everything found satisfactory. Through the courtesy of Mr. Cyril T. Young, Supt. of The Eastern Lands Co., our supplies and equipment were delivered at Sandy Lake, two miles west of Foleyet, from which point a good canoe route via the Pishkanogama River led directly to our starting point—the 63rd mile post on the late O.L.S. Niven's base line, N. lat. 48 degrees, 27 minutes, 54 seconds; longitude 82 degrees, 26 minutes west.

Sun and stellar observations were taken May 25th and 26th, at the post marked 63 M. 2 chains on the west bank, the 63 Mile Post coming in said river; and the two chain offset made to the east and the meridian started the latter date. A wooden post and 1⅞ in. iron post was planted on the north bank of the river 1.15 chains due north of said 63 M. point in river and wooden posts planted every mile and marked consecutively on the north side, while 1¼ in. iron posts were planted beside every third mile post except at township corners where 1⅞ in. iron posts were planted.

Our assistant, a returned man, was unable to handle the instrument, due to the rough nature of the ground in places and the extreme heat, but rendered valuable service in keeping notes copied and checked.

Our original intention was to keep a small party on the meridian while a larger party took the east and west lines, but circumstances made it compulsory to conduct only one party. The 15 mile lake and the innumerable watercourses with which the country was reported to abound in, evaporated and we were forced to abandon canoes and use the pack strap to the end of the work.

After the meridian had been run 9 miles, we ran east on a 9 mile chord of a parallel of latitude intersecting the Pishkanogama River 1¾ miles east of said meridian, and planting posts as indicated above, except that a wooden and 1⅞ in. iron post was left at the 9 mile point with only township names thereon to be moved to the intersection by O.L.S. Fitzgerald. This line was then continued on another 9 mile chord of the same parallel of latitude to the Ground Hog River, a distance of 2 M. 62.69 chains where a wooden post was planted at high water mark and the above chainage inscribed thereon. Two 1¼ in. iron posts were left beside said wooden post and Mr. Speight notified by letter concerning same.

Returning to the starting point, a line was run west on a 9 mile chord of a parallel of latitude a distance of 8 M. 77.95 chains to its intersection with O.L.S. Speight's meridian of 1909 hitting said line 0.87 chains north of the post as shown on copy of notes of said line furnished by your Department, but 0.02 chains south of a 2 in. hub planted in sink hole marking the intersection of a surveyed line running due west and on which was planted 0.54 chains west of said intersection and on the westerly bank of said sink hole a 6 in. spruce post

marked on east side 54 and tied in two by two bearing trees, namely, 10 in. spruce N. 15 degrees west—0.17 chains and 5 in. Balsam S. 45 degrees west—0.076 chains.

The hour being late and the distance to camp long and never doubting at the time but that the latter post was due west of the 9 mile point, the markings on the other post were neglected. So far we have been unable to get any light on the matter.

The meridian was then produced another 9 miles and from this point a second east line run 9 miles with posts planted as per instructions, and a line west to said O.L.S. Speight's line, a distance of 8 miles 75.73 chains intersecting said line 0.49 chains south of XVIII mile post.

The meridian was then produced 9 miles further and a third line run east and west, the latter at VIII M. 73.73 chains intersecting the production of said O.L.S. Speight's meridian 1.33 chains north of the XXVII mile post.

Provisions by this time were running low, but we were able to run six more miles of meridian before being forced to abandon the work within sight of the goal. Had we been able to bring all the canoes along we would have completed the contract but the one small canoe was capable of carrying only our assistant and two canoemen to Fauquier on the T. C. Ry. over a route, the nature of which we did not know, but which if navigable would prove the most convenient route by which to return to complete same or continue the outline work farther north another year. With this idea in mind we had our assistant make a compass survey of the route and have drafted same as per his notes on our returns to your Department.

Instrument Work.

A Light Mountain Gurley instrument was used on the work, and from two to four observations taken every night that polaris was visible. These observations were facilitated by the use of curves previously plotted in our office for the latitude and longitude of the work, a copy of which we attach, and our watch set for solar time and corrected every few days.

We found observations solved by the use of this curve to check to the half minute.

Chainage.

A chain of 400 links was used and the chainers cautioned not to break chain but read the inclination with an Abney hand level and reduce to horizontal distance, curves being also used for this purpose, a copy of which we attach. The chainers were duly sworn in on the ground at the starting point, the chain tested and re-checked twice during the survey, and we believe they strived hard to render correct measurements.

Elevations of all hills were solved from the inclination angles taken while chaining.

Posts and Bearing Trees.

The most durable wood obtainable was selected and often carried many chains and marked by a scribe, while the iron posts were marked with a cold chisel. The largest trees were not selected for bearing trees but smaller and more healthy ones which would not likely for some time fall a prey to the axe of the lumberman, and these trees were chosen as far as possible in such a

position that lines drawn from them to the post, formed an angle of approximately 90 degrees or less, thereby making it the more easy at a future date to relocate the position of the post, should such be lost.

Astronomic bearings of these trees were taken by the use of a wooden disk, so constructed that it rested firmly on the top of the post planted, in whatever position set, and the face of this circular disk was carved into ridges and grooves radiating from the centre and along which the chainman sighted after having set the cardinal points to correspond with the direction of the line being posted.

Blazing of Lines.

As five axemen in all were used on line the picket man was held responsible for the blazing and very satisfactorily accomplished same almost unaided.

Timber.

A great portion of the land lying east of the meridian has been burned over some twenty or thirty years ago and is being rapidly reforested with birch, poplar, spruce and tamarac.

In this section on the first line east and on the fifth mile a narrow but good belt of jack pine has escaped and apparently runs in a northerly direction while scattered trees occur a few miles east on same line.

Very narrow ridges crossing the second line running east indicate what may be the northern boundary of a fair belt of tie timber, as jack pine suitable for tie timber also is present between the tenth and fifteenth mile posts on the meridian.

The forest bordering the third line running east and as far north as the Wokomeesee River, for the most part is second growth as far as we could observe from the tops of hills and trees.

West of the meridian the timber is very large and dense in many places, particularly in the Township of Wadsworth where spruce, balsam, balm of Gilead, poplar, birch and cedar attain a large size being sound as well, and some white pine and much scattered jack pine also is present although the white pine is not sound.

The only clearly defined spruce forest present within the limits of our survey is located along the western side of the Townships of Wadsworth and Lisgar, apparently widening out farther north and following the western bank of the Wokomeesee River. Much of this timber is suitable for pulp and the balance will soon be large enough.

Water Courses.

Due to the drought, navigable routes, if they exist in average years, were limited in our case to the Osishana Creek and Paypeeshekameka River as far west as the meridian, also the Wokomeesee River for some distance south into Lisgar Township, but the Koamakashekak Creek and Otapingshewee River might be improved for driving purposes.

Many of the lakes and creeks within the township lines were obtained from sketches by trappers familiar with the country and although vouched for by them are not considered authentic by us, but have been shown with a view to giving all the information acquired during the progress of the survey.

Rock Formation.

The country rock met with was for the most part granite with a high percentage of mica present in places, the only other formation met with being two outcroppings of schist, one in the third line east on the second mile and the other north of the XXIX mile post on the meridian.

Agriculture.

Most of the arable land is somewhat sandy and in places is suited for farming, but on the whole we think it better left unoccupied until present merchantable timber has been removed.

Animal Life.

Moose abound, indications of a few red deer were seen, wolves and bear are numerous, while the better class of fur bearing animals appear plentiful.

Brook trout were caught in the Koamakashekak Creek and the Paypeeshekameka River with hook and line, and pike and pickerel in several lakes with the trawl, but further than this we cannot say with what varieties the lakes and streams are stocked.

Flowers and Shrubs.

None other than the varieties commonly met with in the great clay belt were observed along the lines surveyed by us.

Water Powers.

We did not have occasion to pass by any waterfalls but know of the existence of four in the Township of Stanley on the Pishkanogama River, with an average head each of possibly 15 or 20 feet, three being within sight of each other.

In conclusion, we beg to thank you for the work allotted to us and assure you that every effort was made to accomplish the character of work required by your Department, and at the same time make a few sorely needed dollars to help tide us over another year.

We sincerely trust that the accompanying plan and field notes together with the timber plan will meet with your approval, all of which is respectfully submitted.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) Sutcliffe & Neelands,
Ontario Land Surveyors.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 31.

SURVEY OF THE OUTLINES OF THE PIC RIVER PULPWOOD AND TIMBER LIMIT, DISTRICT OF THUNDER BAY.

NIPIGON, ONT., August 2nd, 1919.

SIR,—I beg to submit the following report on the survey of the outlines of the Pic River Pulp and Timber Limit, surveyed by me under instructions from the Department of Lands, Forests and Mines, dated Toronto, April 15th, 1919.

Pursuant to instructions, I commenced my survey at the point in which the centre line of the main track of the Canadian Pacific Railway is intersected by the line between townships numbers 73 and 74, as located on the ground by E. Stewart, O.L.S., in his survey of township outlines along the C.P.R. in 1894. From this said point I ran north astronomically a distance of 32 miles and 25 links to the north-east angle of the pulp limit, this said line forming the easterly boundary thereof. I planted the 4 Mile Post as directed in my instructions and at the end of each mile thereafter I planted a wooden post. These posts were made of the most durable wood obtainable. In a very few instances it was found absolutely necessary to use balsam posts but the great majority of the posts, as shown on my field notes, are either of spruce or of Banksian pine. Wherever possible, I placed a cairn of stones about the post. I planted iron posts beside the wooden posts at the end of every third mile, as instructed and marked the iron posts with a cold chisel. The iron and wooden posts are marked with Roman numerals, marked with the number of the mile from the initial point of each line. I marked two bearing trees, wherever possible, for each mile post. These are shown on my field notes. In some instances, it was impossible to get any bearing trees; these instances are also noted in field notes. Unless otherwise specified in my field notes, all wooden posts planted were dressed six inches square. All posts were firmly planted in the ground, and after being set, stand at least three feet above the ground.

From the north-east angle of the Pulp Limit, I ran west astronomically on six mile chords of the parallel of latitude, a distance of 46 miles to the north-west angle of the limit, and from that point, I ran south astronomically to the shore line of Lake Superior. Where the end of a mile came in a lake, as it did in several instances, I planted a post on the nearest shore and marked it to show its distance from the true position.

Where the distance across a lake or river could not be obtained with a steel tape in the usual way, I obtained the width by triangulation. The base of the triangles employed in this work was, in all but two or three instances, made of sufficient length to give an angle opposite the base of not less than ten degrees. Frequent astronomical observations for azimuth were taken and the notes of these I am enclosing with my field notes. My lines of survey were well cut out and particular attention was paid to the blazing thereof. On the north boundary there is a burnt area of eleven miles in extent. There was no timber on this area so no blazing at all could be done. However, I had my picket man plant pickets with a mound of stone about them whenever he could do so, to render it possible to find and follow this line. Wherever there was green timber, the line was well blazed in the prescribed manner.

Soil.

The easterly boundary of the limit, ran, for the better part of its length through rocky country, this being granite. There were some sandy areas, as shown on the field notes, but for the most part, this line ran through a rough, rolling, rocky country. This kept up along the northerly boundary until I had crossed the Pic River. From this point on, along the northerly boundary, the soil was clay, where it was not rocky. The westerly boundary was also rocky, very rough, with, however, sandy soil between the areas of rocky land. In general, the entire outline of this limit may be said to be very rough and rocky, especially along the northerly boundary where sheer cliffs of from 100 to 400 feet are met with. The areas of clay and sandy soil met with were so small in extent as to be of no interest from an agricultural standpoint.

Timber.

As shown on the field notes for the several lines, the prevailing timber is spruce and balsam, birch and poplar. There was some Banksian pine met with but not in sufficient quantities or of sufficient size to be of commercial value. In fact, no tie timber was encountered at all on this survey except through the small area that had previously been cut over on the westerly boundary. Although the survey lines ran through spruce and balsam, in some cases of considerable size, there were no areas encountered that would be of interest commercially. It was a constant source of wonder to me as to where the areas of pulpwood did lie, I having heard that this was a wonderful limit for pulpwood. Undoubtedly, the areas referred to must lie well within the limit. There was no white or red pine, and no cedar met with. As stated above, there is an eleven-mile burn on the north boundary, twice burnt over, extending four miles to the south and two miles to the north of the northerly limit.

Minerals.

The formation for the greater part of the area, as covered by me, was of granite. There were small areas, especially on the northerly boundary which would warrant the attention of prospectors. My men brought back samples of free gold and some samples of copper. If it is the wish of the Department, I will be glad to forward these to Toronto. I might add that iron pyrites were found to some extent along the westerly boundary.

Game.

The country abounds in wild game. Moose and cariboo were found in great abundance. The smaller lakes along the northerly boundary being great natural feeding places for them. Partridges were found in large numbers. As shown on the notes, there are many small beaver meadows. Beaver are very plentiful in this area. The fishing is excellent, speckled trout being in abundance in all of the streams met with. The lakes are full of pike and pickerel. On two of the larger lakes, lake trout seemed very plentiful.

Lakes and Streams.

A glance at the plan will show better than a description can, the lakes and rivers met with on this survey. The principal rivers being the Pic, Little Pic

and Steel. The larger lakes being the Whitefish, Trout and Owl. There are innumerable small streams and small lakes in this large area. I have endeavoured to show these and the connections between them on my plan. It must be understood, however, that this is a most incomplete plan, as far as water routes are concerned. There were no places where I considered that a reservation should be made to the Crown of water powers. There may be such areas within the limit, but at or near the boundaries as run by me, there were no areas of sufficient importance to warrant any special attention.

Conclusion.

I feel, sir, that this report is not complete in detail, but the plan and field notes will show the extent of the timber areas, will show the rivers and lakes, canoe routes, burnt and cut-over areas, better than they can be covered in any report. If there are any inquiries that you, sir, may wish to make, or that the Department wishes to make, I will be glad to go into further detail as well as I can. As a timber report, this report will be of no value, for we encountered no timber on the survey—that is, no timber of commercial value and in sufficient quantity to warrant timbering operations to drive it to the lake.

I trust, sir, that my plan and field notes will be found to be correct and in good order, and that the lines of survey as run on the ground, may be found by your Inspector to be well cut out and blazed, the posts well marked and planted. All possible care was taken to follow the instructions, both written and printed in this and other respects.

I have the honour to be, Sir

Your obedient servant,

(Sgd.) M. E. Crouch.
Ontario Land Surveyor.

The Honorable, the Minister of Lands, Forests and Mines.
Toronto, Ontario.

Appendix No. 32.

Survey of the Township of Cumming, District of Algoma.

Sault Ste. Marie, January 16th, 1919.

Sir,—We have the honour to report that under instructions dated the 26th of June, 1918, we have subdivided the Township of Cumming into farm lots of approximately 100 acres each. We commenced the survey by running south astronomically the sideline between Lots 6 and 7 from the north boundary of the township. This line is a continuation of the corresponding sideline in the Township of Idington subdivided by O.L.S. Dobie. We cut this line for approximately 9 miles taking a number of observations. We next ran the south boundary of the township running due west from a post marked 9 M. planted by O.L.S. Niven in 1906 to the intersection with another meridian also run by O.L.S. Niven in 1906.

These meridian lines are approximately 9 miles apart. We continued the survey throughout the township observing Polaris frequently for meridian and correcting any small errors found in the direction of the lines. A traverse was made of all lakes found in the township.

There are no rivers of importance in the township. Lost River is not navigable and cannot be used even for canoe travel as it is filled with log jams and contains many beaver dams. During the summer season parts of this river are practically dry.

The whole of the township is quite level, there are a few clay ridges which are unimportant. Rock outcrops only in three or four places in the whole township. The formation consists of Keewatin greenstone and schist. Near the south boundary of the township there are strong indications of magnetic deposits. A few mining claims were staked on these indications in 1913 but were apparently abandoned as there are no signs of work having been done.

The soil is principally clay or clay loam. This is covered in the green bush with about twelve inches of moss and black muck but in the brule the clay is lying exposed. We would consider fully seventy-five per cent. of this township fit for agricultural purposes. Portions of the brule are sparsely timbered and could be cleared with very little work.

The timber in the township is nearly all spruce up to about 8 in. in diameter. On the ridges and higher ground considerable poplar and birch is found. There are also quantities of cedar in the swamps near the west boundary of the township. The brule is generally covered with small spruce and alders and is about twenty years of age. Evidently this country was fire swept about eighty years ago as no standing timber exists older than this.

No fish of any importance were noticed in the township. The lakes are all marshy and shallow and only a few pike exist in these. Moose and beaver are quite plentiful. There is no settlement of any description within the limits of the township.

The average magnetic variation we found to be 7 deg. west of north.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) LANG, ROSS & RAMSEY,
Ontario Land Surveyors.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 33.

TRAVERSE SURVEY OF THE OPAZATIKA RIVER AND LAKES, PISHKANOGAMA LAKE, GROUND HOG AND HORWOOD LAKE, AND SAHKATAWICHTAH RIVER AND LAKE.

COBALT, November 12th, 1919.

SIR,—In obedience to your instructions, dated May 2nd, 1919, to traverse certain lakes and rivers in the Districts of Sudbury and Algoma, I have surveyed as much of my contract as was possible and beg to report as follows:—

Routine of Work.

On May 16th, I left Cobalt with my party. We commenced the survey of Opazatika River at the south boundary of McCrea Township on May 19th, and worked upstream in a southerly direction through Opazatika River, Rufus, Penelton and Opazatika Lakes, finishing this portion of the work on July 4th. From Opazatika Lake we came down stream to the National Transcontinental Railway and boarded train to Foleyet on Canadian Northern Ontario Railway.

The survey of Pishkanogama Lake was commenced at the south boundary of Foleyet Township on July 14th, and finished on August 5th. Camp was moved to Ground Hog Lake.

The survey of Ground Hog Lake was commenced at the south boundary of the north half of Keith Township on August 9th, continued through Ground Hog River to Horwood Lake. Through Horwood Lake and the north-east arm thereof and tied on to the north boundary of Dale Township. This work was finished on September 12th and camp moved south to Sahkatawichtah River.

The survey of Sahkatawichtah River was commenced at the south boundary of Dale Township on September 16th and continued southerly to Sahkatawichtah Lake. The survey of this lake was completed with the exception of a small portion at the north-west end. This is shown dotted on the plan.

For some time the weather had been stormy and wet, making it difficult to get readings and dangerous for men in canoes owing to the size of the lake. On the morning of September 30th I moved camp to Ground Hog. On October 1st, I paid off my party with the exception of C. E. Code, O.L.S., who has assisted me in preparing plans of the work.

From considerable traverse work I have done in winter I think that about as good progress can be made then as in summer. As blazed trees are used to tie in traverse points, the difficulty of planting posts in winter is not encountered. The main traverse being chained on the ice, is very accurate. Even with the snow, the shore line can be determined very accurately. If you so desire, I shall be glad to continue the survey as soon as the ice becomes good.

The following is the mileage of traverse:—

Opazatika—		
River	25.5	
Lakes	83.5	
Islands	16.5	
		125.5
Ground Hog—		
Horwood Lake	45.8	
Ground Hog River	4.5	
Ground Hog Lake	10.5	
Islands G. H. L.	2.0	
Islands Horwood Lake	3.0	
		65.8
Sahkatawichtah River	6.5	
Sahkatawichtah Lake	20.0	
Sahkatawichtah Islands	1.5	
		28.0
Pishkanogama—		
Shore Line Blue	61.7	
Shore Line Brown	69.8	
Islands	4.7	
		136.2
Total		355.5

This total is only approximate.

Method of Survey.

(*a*) *Instruments used.*

Except in the survey of Pishkanogama Lake, where most of distances between stations were chained on the sand, the traverse was made by stadia readings for distance. Azimuth angles were carried through with a transit.

The stadia rods used read direct to tenths of links. The accuracy of readings was checked from time to time by readings on measured lines and also on the sides of triangles, calculated from chained base measurements. They were found to be very accurate. Results are shown in the field notes.

Field Notes.

(*b*) One form of field notes was kept throughout the course of the work. The notes were transcribed in ink and carefully checked. They show—station, azimuth, distance, angle right, bearing, and under remarks, the point on which the reading was taken.

(*c*) Observations.—Observations were taken frequently on Polaris and the sun for azimuth. The calculations are shown in the field notes.

(*d*) Posts and blazed trees.—On rivers and around the shores of lakes, trees were blazed at intervals of about one mile and were marked "1 M." "2 M." "3 M." etc. Records of these are shown on the plans and in the field notes.

On islands, stump posts were made. A good sound tree was felled and the stump squared and marked with a letter "A. B. C." etc. Except in a few cases where the islands were very small, when a tree was blazed. The bearings shown to posts and trees are astronomical.

(*e*) Survey lines, township boundaries.—In all cases where survey lines were found; they were tied in and are shown on the plans. Posts were planted one chain from the shore on each side of the river or lake, where this had not been done in the original survey.

At the south end of Pishkanogama Lake, on the west side, we found what appears to be the production across the lake of O.L.S. Sinclair's line, run in 1867. We tried to find more blazed trees by turning an azimuth of 90 degrees, but the others seemed to have been burned as it is a very old brule at this point. The tree we found is a fourteen-inch cedar, blazed on three sides and marked "IXMIX." The wood grown over the blazes seems to be about 32 years old and the cedar has been dead probably 20 years.

Descriptions of Lakes and Rivers.

(*a*) *Opazatika River and Lakes.*

Shores.—Opazatika River has an average width of about two chains. The shores are clay, except in a few places where rock outcrops. The land back from the banks is nearly all an old brule grown up with poplar of from three to four inches in diameter down to mere brush. The soil is a good clay loam very suitable for agriculture, and very easily cleared at present while this growth is small.

The shores of Rufus, Penelton and Opazatika Lakes are rocky and, as the brule extends here also, there is very little valuable timber.

Water Powers.—There is only one falls of real value from a power viewpoint. This is on the Opazatika River at the eleventh mile post of the traverse, south of McCrea Township.

Owing to wind I was unable to get the flow measurement. The head is 22.7 feet.

One hundred and sixty acres should be quite sufficient land for development purposes. The two snapshots shown below are of this falls.

Islands.—There are thirty-six islands in Opazatika Lake. The largest one contains 776.8 acres. The next largest 24 acres. The majority of the remainder are small. They are almost all very rocky and timbered with jack pine, spruce, birch, poplar and balsam. A3 which is the largest is nearly all brule.

(*b*) *Pishkanogama Lake.*

Shores.—The shores at the north end of Pishkanogama Lake are of sand. Sandhills rising from the original shore line are timbered with jack pine, some spruce and balsam, birch and poplar. At the narrows of the lake rock outcrops. From this point to the south end of the lake, the shores are rocky.

A considerable amount of the timber has been destroyed by fire, particularly at the south end of the lake and along the west shore from the narrows south. There is, however, considerable good timber on the west side of the lake. Jack pine and spruce averaging from 10 to 12 inches in diameter, also balsam, birch and poplar.

Towards the south end of the lake the ground rises very quickly from the shore line, and from portions I was over, I would say was not favourable for agriculture.

The original water level of the lake has been lowered at the north end 19.4 feet. This leaves a series of small mud rapids at the narrows. The water immediately above the narrows is very shallow, making progress in canoes difficult for a distance of about one mile. The difference in elevation between the original and present water level above the rapids at the narrows is 10.8 feet. At the south end of the lake the water has been lowered 11.7 feet. The two snapshots shown below were taken from the north end of the lake looking south.

At the north end of the lake, the bottom exposed is sand. From the narrows south, it is a mixture of sand and clay.

On the plan of survey I have shown the land between the original and present water level coloured a light brown.

Islands.—There are fifteen islands in Pishkanogama Lake. The largest, Island F, containing 34.6 acres. The next largest, Island C, 6.8 acres. The remainder are very small. With the water at its present elevation, most of the islands are really mainland. The acreage shown on the plan is for that area which is within the original shore line. All the islands are well timbered, and under natural conditions must be very pretty. The soil is sandy with rock outcroppings.

(*c*) *Ground Hog Lake and River.*

Shores.—The shores of Ground Hog Lake are fairly high. The ground rises sharply from the shore line. The land is rocky covered in places with a heavy overburden of clay and gravel.

The north, west and south shores are fairly well timbered, but the east shore is most brule.

Islands.—There are five islands in Ground Hog Lake. Island A, containing 28.8 acres. The next largest, Island C, containing 5.2 acres. The remainder are very small. With the exception of A, which is sand and gravel, they are rocky. All are well timbered.

The river south from Ground Hog Lake has an average width of five chains. The current is slow. At station 16, 17 and 18, there are rapids with a total fall of 4.6 feet. The banks of the river are mostly flat. Considerable ash is to be found along them, some of it running as large as ten inches in diameter.

(*d*) *Horwood Lake.*

Shores.—The shores of Horwood Lake are very rocky. The north-east arm shores being particularly high and rough.

Timber.—The west side and the north-east end of the lake proper, are well timbered with jack pine, spruce, balsam, birch and poplar, while the remainder is old brule with patches of second growth jack pine, spruce, poplar and birch.

The north-east arm from the narrows at its outlet up to about half way up the arm, say to station 64, is old brule with patches of jack and red pine. From station 64 to the north end is good timber, jack pine, spruce, balsam, birch and poplar with good cedar along the shores.

Islands.—The islands in Horwood Lake are all rocky and with the exception of the large island at the north end of the lake proper, which is brule, are all well timbered.

(*e*) *Sahkatawichtah River and Lake.*

Shores.—The shores of Sahkatawichtah River and Lake are fairly rocky. The ground back from the shore is high and rough.

Timber.—The shores along the river are mostly old brule.

The north-west side and the north-east end of the lake are practically all brule, while the south-east shore is well timbered with spruce, jack-pine and balsam.

Islands.—The islands are all rocky and fairly well timbered. They are all small.

Accompanying this report are:—

Plans.

Opazatika River and Lakes.
Pishkanogama Lake.
Ground Hog and Horwood Lakes.
Sahkatawichtah River and Lake.

Field Notes.

Three field books containing notes of all the above plans.

The above is respectfully submitted.

I have the honour to be, Sir

Your obedient servant.

(Sgd.) T. G. Code,
Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 34.

SURVEY OF TOWNSHIP OUTLINES IN THE DISTRICT OF SUDBURY.

ORILLIA, October 31st, 1919.

SIR,—Upon receipt of your instructions bearing date of the twenty-second day of April, 1919, for the survey of township outlines in the District of Sudbury, we proceeded to make such preparations as were necessary to carry out the work outlined therein.

The unsettled condition due to after-war unrest, effecting especially the labour market, and to a lesser extent the procuring of certain kinds of supplies and their transportation, consumed a good deal of time, and it was not until the 27th day of June following, that we were able to leave with our party for the site of the work, although we had men stationed at Agate for some time previously awaiting the arrival of supplies. All through the work this state of unrest was reflected in the working forces, and added not a little to the difficulties ordinarily encountered.

The Indians in the upper country also, admittedly the best men procurable for this class of work, experienced a heavy mortality during the past winter, through the outbreak of Spanish influenza, and many of those who were fortunate enough to recover, were in poor condition to withstand the hard work and exposure involved.

Heavy bush fires to the south and west lent an occasional smoke pall of some days' duration, at times thick enough to render sighting difficult; while from the latter part of August and through September, there was a period of almost constant rain.

Sending our main supplies to Agate to be transported up the Chapleau River, we left the Canadian National Railway at Missonga and proceeded to the south-west angle of the Township of Shenango, where the survey was commenced. Running the meridian from this point due south to its intersection with the base line run by O.L.S. Speight, we proceeded west, and in general followed the programme laid down in the instructions. Six inch square wooden posts were planted at every mile, or at the nearest shore where water interruptions occurred, with the addition of an iron post at three mile intervals, and marked with the mileage or the township names. Astronomical observations were taken wherever desirable, when weather conditions permitted, and a close alignment maintained. Base lines were run on the chord of the parallel. Details of all operations will be found in the plans and field notes returned herewith.

The country traversed, lying as it does along the southerly edge of the clay belt, possesses the characteristics of border topography, and marks the transition from the rougher rockbound hill country to the south, to the level expanses of the clay belt. The surface is one of short broken undulations, seldom interrupted by sharply rising hills, and such of these as do occur rarely exceed forty or fifty feet in altitude. Comparing this section with surrounding areas, we might say that to the south are storm tossed waves, here a rippled surface and to the north a placid calm.

Rock outcrops are not numerous, the country being well covered, and such exposures as do occur apparently belonging to the Laurentian formation.

Two main drainage channels traverse this area, flowing toward the north. Trout River crossed by the base line between Sherlock and Lincoln at VI 3-4 M.

and following closely the course of the meridian between Lincoln and Copperfield, is a leisurely stream affording an excellent canoe route, and imposes only one obstacle in its course through these townships, in the form of a fall of some fifteen feet, opposite the four mile post, where a portage of about five chains is required. From opposite V½ to VIII½ miles, this stream widens into a lake expansion, with well wooded shores and four islands of six to eighteen chains in length. From the last mentioned point the course of the river turns south-easterly.

Chapleau River, crossed by the base line between Bonar and Copperfield at mileage 3¼ and by the meridian Sherlock-Bonar at VI M + 22.70 chains and entering Agate Lake in the Township of Kapuskasing; is of quite a different character; and is marked by many shallow rapids in its course through Bonar and Sherlock, rendering it a poor stream for travel by canoe. A fall of about fifteen feet occurs a short distance north of the south boundary of Bonar, and another about two and a half miles further south. The banks of this stream are usually low, and must occasion a good deal of flooding at spring levels. Its general width is from one hundred and fifty to two hundred feet, of comparatively shallow depth, and good current.

A creek or river enters the Chapleau about opposite IV M. on the Bonar-Sherlock meridian. This stream flows from a considerable lake, approaching the south boundary of Bonar at V. M. and in its westerly continuation crosses the meridian Bonar-Lloyd at II M + 67 chains. It is also shallow and tortuous, with many rapids, and difficult of navigation. Its general width is about one hundred feet.

The lake through which this latter river passes, is of peculiar bifurcated outline, about two and a half miles from north to south by an extreme width of a mile and a quarter. It possesses deep, clear water, high and beautifully wooded shores and sand beaches; a campers' playground were it for difficulty of access.

The only other considerable lakes noted were that at the intersection Shenango-Sherlock-Lemoine-Lincoln; and one whose easterly end is crossed by the meridian Lemoine-Lincoln between VII and VIII M. Both these lakes find an outlet to the east.

Soil.

The soil throughout the area through which the outlines pass is of a sandy character, usually mixed with boulders or gravel, and cannot be classed as even fair agricultural land. In places, notably along the Sherlock-Bonar meridian, a very hard subsoil occurs, of a sand-clay mixture, at a depth of a foot, and effectually prevents trees from obtaining an adequate roothold.

Timber.

Extending from II½ M. to VII¼ M. on base line Sherlock-Lincoln, there is an area of heavy timber, chiefly of jack pine of a diameter from six to twenty inches. This is in thick stand, tall and good, and would afford excellent opportunity for log and tie making. Many of the trees of smaller size would cut out five to six railway ties. Large single trees of spruce, poplar and birch also occur in this area.

Considerable jack pine of merchantable size also grows along the south boundary of Bonar west of the Chapleau River from IV M. westerly and extends northerly

along the west boundary of that township, where, however, it takes on a more limby character, than that further east.

Red pine up to twenty inches, and to the extent of perhaps a thousand trees, was found growing on the peninsula separating the two arms of the lake opposite V M. south boundary of Bonar. Exclusive of scattered trees of rare occurrence, this was the only block of white or red pine observed, save for a clump of mature white pine apparently of small extent, on the hill at IV M. + 50 chains on the meridian Lemoine-Lincoln.

Outside of the two areas above described, the central southerly part of Sherlock-Lincoln, and southwesterly part of Bonar, the forest throughout this region, in so far as could be observed from outlines run, does not appear to offer great encouragement for timbering operations. Everywhere large single trees are met with, especially of spruce which furnishes some fine examples of tree growth, and occasional large poplar and white birch. In some of the swamps, also, and along the river banks, cedar from fifteen to twenty-four inches in diameter is found growing. This is of fair length and sound, but no large area of this species was seen.

The general character of the growth, however, is immature and would afford but a small proportion of timber of logging size. This condition may be due to former fires, where sufficient time has not elapsed to give a mature growth, except for those trees which weathered the conflagration. In some localities it would appear, however, to be due to a hard impenetrable subsoil: where as soon as a tree attains a height of thirty to forty feet, it is in imminent danger of being uprooted by the wind. This latter condition is specially evident along the Sherlock-Bonar meridian. Indeed, through the whole area windfallen timber is much in evidence and constitutes a serious fire menace. Almost everywhere the ground is covered with a thick undergrowth: alder on the lower levels, moosewood and hazel on the higher lands.

To the southward and extending up to the lake expansion of the Trout River in the southwesterly part of Lincoln, which marks its northerly limit; the country has been effectually fire scorched, and is occupied by young growth of a few years. Crossing the south boundary of Bonar from V M. + 16 chains to 40 chains and extending northeasterly to the lake shore; there is also a small burnt area, but only in these two localities does the country show the effect of fires of the past thirty or forty years, being uniformly green.

In common with much of the country to the south, this area would probably find its most advantageous disposition by being included in forest reserve: and the greater part of it by being allowed a considerable time to mature its timber before logging operations are undertaken. This, of course, being contingent upon the feasibility of properly protecting it from fire.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) Cavana & Watson,
Ontario Land Surveyors

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 35.

TRAVERSE SURVEY UP LAKES, RIVERS AND PORTAGES IN THE TIMAGAMI FOREST RESERVE, DISTRICTS OF SUDBURY AND NIPISSING.

PARRY SOUND, December 5th, 1919.

SIR,—I have the honour to submit the following report of the traverse survey uplakes, rivers and portages in the Timagami Forest Reserve, Districts of Sudbury and Nipissing under instructions bearing date April 30th, 1919.

I left Parry Sound with cook and one man May 15th, and proceeded by rail to Timagami Station, reaching there in the afternoon of May 16th, where I was met by assistant Coltham.

Owing to the high wind on Timagami Lake, I was compelled to secure the services of a gasoline launch to transport my men and supplies to Bear Island which I reached late Tuesday evening, thus compelling me to put up my men and myself at the hotel for night. Owing to rain on May 17th, we were compelled to seek the shelter of the hotel until evening, when we were able to pitch our tents where we remained until the following Monday morning. At Bear Island we secured the services of two Indians.

May 18th we proceeded to Gull Lake which we reached the same evening in time to pitch our tents. After testing our micrometer by chained distances, we commenced the traverse of Gull Lake the following Tuesday. This is a fair size lake with numerous islands, covered with red and white pine. The shores of Gull Lake are high and very rocky and in some places are steep.

After completing this lake we traversed Skunk and Allan Lake, and also made a chained traverse of the portages between these lakes.

On June the 3rd, we moved camp to Turtle Lake, where on the following morning we obtained a Polaris observation. The shores of this lake are high and rocky.

From here we moved camp back to Gull Lake, where we traversed the two small lakes Long and Cummings.

June 16th we moved from Gull to Devil's Lake, which we commenced to traverse on the following day. This lake appears very deep with high rocky shores. There are the remains of a mining shack on the east shore of this lake.

The next lake to be traversed was Emerald, a beautiful lake with numerous sand beaches and projecting points. The remains of a mining camp with numerous buildings are found along the west shore.

On June 27th, we proceeded to make a traverse of the small lakes, Aleck, Woods, Moses and Kibble. These lakes are situated among high hills with high rocky shores, therefore, joined by portages.

From here we moved camp to Obabika Lake. This is the largest lake that we encountered on our work and was visited by a large number of tourists during the summer. The shores are generally high and rocky with numerous sand beaches and a few marshy bays. Along the banks are red and white pine, cedar and birch. On completing this lake, and smaller ones adjacent thereto, we made a traverse of the Obabika River as far as the storage dam.

Our next lake was Wakimika which was reached by a river of the same name. The south end of this lake is marshy with high rocky shores elsewhere.

From here we proceeded across two portages to Diamond Lake. The shores of this lake are high and rocky with high hills surrounding them.

Completing this lake we moved across a one and three-quarter mile portage to Willow Island Lake. This is a long narrow lake with a few scattered islands. The shores are generally rocky with numerous sand beaches. This lake is connected by a narrow strait of water with Lake Sucker Gut, the survey of which was completed on August 27th. From here we moved camp across many lakes and portages to the Obabika River, on arrival there we traversed river to the junction with the Sturgeon. The Sturgeon River averages between one and one-half to two chains wide with high clay banks ranging between six feet and fourteen feet high, very few outcrops of rock are found. The land is a sandy loam and appears well adapted for agricultural purposes. Considerable horse-power could be developed on the Upper and Lower Goose Falls met with on this river.

Our next work was the traverse of Grassy Lake which was reached by canoe and portage. The west end of this lake is marshy with sand beaches on the east side. After completing the traverse of portage route to Devil's Lake, we connected up our survey with previous work.

Along the shores of the lakes and rivers trees were blazed and marked with a designating number as 1, 2, 3, etc., where shown.

On each island of any size a tree was blazed and marked with the numbers "A," "B," "C," etc., as shown in plans.

Fish and Game.

Fish of many kinds, especially trout and black bass were found in the different waters throughout the work.

Moose and red deer were very plentiful, with many signs of beaver workings.

Accompanying this report are my diary; plans of lakes on linen, scale twenty chains to an inch: field notes of part of line between Townships of MacBeth and Clement; and my account in triplicate, which I trust you will find in order.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) David Beatty,
Ontario Land Surveyor.

Appendix No. 36.

Settler's Loan Commissioner.

Toronto, October 31st, 1919.

To the Honourable the Minister of Lands, Forests and Mines, Toronto, Ontario.

Sir,—I beg to herewith submit a report of the operations conducted by this Department under the Northern & Northwestern Ontario Development Act, Amending Acts 1916 and 1918.

Up to October 31st, 1919, a total of 2,001 applications for loans were received, asking for an amount of $776,790.00, an average of $382.39 per application. With

every desire to co-operate and assist deserving settlers, careful consideration was given to each individual request, and loans advanced, on the basis of security offered in the way of improved land, where it was clearly shown the money could be used to good advantage in the improvement of settlement conditions.

A total of 1,414 loans were made to settlers amounting to $442,256.00, an average of $312.76, and in addition a loan of $12,000.00 was advanced to the Sudbury Co-operative Creamery Co., Ltd., the loans being distributed over the various districts as follows:

District.	No. of Loans.	Amount.
Algoma	17	$4,525 00
Kenora	115	33,545 00
Nipissing	64	22,750 00
Rainy River	121	38,300 00
Sudbury	29	21,725 00
Temiskaming	635	197,265 00
Thunder Bay	434	136,146 00
Totals	1,415	$454,256 00

Reports received and observations made would indicate that the loans granted have been of great benefit to the settler struggling to get sufficient clearing to enable him to stay at home and work the land, and to get some live stock with which to carry on.

Repayment of loans has been very satisfactory as is evidenced by the fact that almost 90 per cent. of the interest payments are up-to-date and payments of principal have exceeded the amount due, on account of some loans being paid off in advance.

In conclusion, would direct your attention to the following memorandum giving further details of operations carried on, and would say that appreciation of the small loans granted under easy conditions of repayment has often been expressed by the individual settlers concerned.

MEMORANDUM OF SETTLERS' LOANS TO OCTOBER 31ST, 1919.

APPLICATIONS.

Total number of applications received	2,001
Total amount applied for	$776,790 00
Average per application	382 39
Amount applied for under approved applications	564,640 00

LOANS.

Number of loans issued	1,415
Equal to 70% of applications.	
Amount granted	$454,256 00
Equal to 58% of total amount applied for and Equal to 80% of total amount applied for under approved applications.	
Average loan	$312 76
Total acreage covered by liens	217,040
Acreage improved land	29,729
Equal to 13.6% of total acreage.	
Average loan per acre on total acreage	$2 03
Average loan per acre on acreage improved land	14 87

NOTE.—Figures, except averages, include application for, and loan of $12,000 to Sudbury Co-operative Creamery Co., Ltd.

Repayments.

Accrued interest due	$48,402 90
Accrued interest received	42,974 63 or 88.78%
Payments on principal due	70,469 71
Payments on principal received	70,500 25 or over 100%
Total payments due	118,872 61
Total payments received	113,474 88 or 95.45%

Unpaid Principal and Accrued Interest Outstanding.

District.	Amount.
Algoma	$4,026 74
Kenora	28,492 00
Nipissing	19,042 50
Rainy River	33,184 15
Sudbury	20,544 55
Timiskaming	162,168 78
Thunder Bay	121,725 30
Total	$389,184 02

Yours very truly,

F. Dane,

Settlers' Loan Commissioner.

Appendix No. 37.

Algonquin Provincial Park.

Superintendent's Report.

Algonquin Park, October 31st, 1919.

Honourable Sir,—I beg to hand you my twenty-first annual report on the Algonquin Provincial Park for the fiscal year ending October 31st, 1919.

Situated as Algonquin Park is, only 169 miles from the capital of Canada, 206 miles from Toronto, within easy journey of the principal cities of the United States and crossed by two important railways, the Grand Trunk and Canadian National, it has become a very popular health and pleasure resort. The angler, too, from all over the continent has found in the hundreds of lakes and the numerous rivers which take their rise in the Park, sport that cannot be surpassed in any part of America. Salmon trout are found in all our lakes, and speckled trout in most of them and all our streams. During the past season some very fine specimens were taken, the largest being a salmon trout weighing about 26 lbs. The small-mouthed bass was introduced here a number of years ago and has proven a great success. It has not only furnished splendid sport within the park, but has stocked the waters for a distance of a hundred miles tributary to the Madawaska river. Bass are not native to these waters, but thrive wonderfully where introduced.

The Park covers an area of some 2,741 square miles or 1,754,240 acres, in the district of Nipissing. It is a net-work of lakes and rivers, five important rivers taking their rise here. It is densely wooded with pine, maple, birch, beech, hemlock, spruce, etc.

That the object in setting aside this territory as a game preserve and breeding ground for wild life and a health and pleasure resort for the people of the

Province has been attained, is beyond dispute. Thousands of visitors annually enjoy the attractions of this health-giving region.

There are five hotels, all of which have been filled during the past season to their utmost capacity, and many visitors had to be refused for want of room. The largest hotel is the Highland Inn, situated on Cache Lake at Headquarters, which is owned and operated by the Grand Trunk Railway Company. Here one hundred guests can be accommodated and many more in tents. In connection with the Inn are two camps, Nominigan, situated on Smoke Lake some eight miles away, and Minising on Big Island Lake, ten miles distant. Each of these consists of one main lodge with large dining room and assembly hall, also a number of bedrooms, and several cottages that will each accommodate eight people, and supplied with bathrooms, open fire-places, etc. The sanitary arrangements are first class. Meals are served at the main lodge. Each of these camps can take care of some sixty people; they are reached by stage from Algonquin Park station, or by canoe from Cache Lake and Joe Lake respectively. Hotel Algonquin at Joe Lake, some seven miles west of headquarters, is owned and operated by J. E. Colson. Here some fifty people can be accommodated, and as many more in well furnished tents. Mowat Lodge, owned and operated by J. S. Fraser, at Canoe Lake, is really a part of the old Gilmour headquarters, and can accommodate some twenty-five people. In connection with each of these places is a good outfitting store and boat and canoe liveries. The lakes most frequented by the tourist are kept stocked annually; this year we put in here something like one hundred thousand salmon trout fry, and as many small-mouthed bass from the Government hatcheries, also a car of matured bass.

Game of all kinds is also very abundant. Otter, mink, marten and fisher are on the increase, while all our lakes, rivers and creeks are full of beaver, the annual increase of which runs into many thousands, the number taken out yearly being scarcely perceptible. I am glad to report that those sent to stock the waste lands of the townships of Lavant and Dalhousie have done well. James Park, of Maple Ridge Farm, writes they have had no trouble protecting them, as the residents take a lively interest in the matter, and there are already several healthy colonies. Those, too, sent to Rondeau Provincial Park, in Kent County, have taken hold and have not only adapted themselves to the altered conditions, but on my visit there this fall, a friend many miles from the Park told me he knew of a colony who had built a dam and were making a home not far from his place. The fishermen also tell me they are frequently seen swimming in the Eau.

It is certain with the war over there will be a big demand for live beaver for stocking purposes. The Board of Game Commissioners for the Commonwealth of Pennsylvania have asked for one hundred for the game preserves of that State. Some of these have been sent and they arrived in first-class condition, but owing to the late date at which the order was received, we will not be able to ship them all this fall.

Deer and moose are increasing all over the Park, especially the deer, and they afford a great deal of pleasure to the tourists as they pass through our lakes and streams, their tameness giving abundant evidence that they know they are protected. These animals overflow and stock the many hunting grounds surrounding the Park, thus keeping up the supply and thereby adding to the revenue of the Province in the hunting licenses sold.

Wolves, I regret to say, are still very much in evidence and very bold, notwithstanding the large number killed each winter by our rangers. Of course the abundance of game in the Park is responsible for this. The wolf soon learns where food is most easily obtained. The men get a bounty of $20.00 for each wolf killed, the skins going to the Government and being worth as much or more than the bounty paid.

We took out the usual amount of fur this year, which was sold by tender at the Parliament Buildings, bringing the substantial sum of $11,781.44. The fur is taken out by our regular rangers, the only extra cost being for traps. Fishing licenses were issued to the amount of $1,612.00, residents paying $3.00 and non-residents $5.00. We also collected $30.00 for guide's licenses. This does not include moneys paid direct to the Department.

We have several large boys' school camps in the Park, where from thirty to fifty boys spend a healthful and in all ways a beneficial holiday. At Cache Lake we have a large girls' school camp under the able management of Miss F. L. Case, of Rochester, N.Y. Here sixty girls spend the summer holidays under careful teachers and are instructed in woodcraft, canoeing and swimming. The entire camp this year consisted of seventy-five people. There are also a number of cottages on this and Canoe Lake, held under a twenty-one year lease, paying under the old regulations $7.50 per year, and under the new $10.00. The school camps pay $15.00 a year. The sum of $592.00 was collected here this year for rents, the hotels and some others paying direct to the Department. During the summer and fall hundreds of anglers and canoeing parties are scattered all over the Park tenting and canoeing from lake to lake.

Our staff consists of thirty-five men and superintendent and one housekeeper at the rangers' quarters, whose husband takes care of the grounds, etc., at headquarters and helps the lineman keep the phone line in order. The duty of our men during the trapping season is to patrol the beats under their charge in order to prevent illegal trapping. In general, two rangers travel together, having a stated section to look after in which they keep the portages cut out and the shelter houses in order. These shelters are usually a day's journey apart, and the practice is for the ranger to spend several days at each looking over adjacent territory. We have built seven new shelters this year, one in each of the following sections, Eagle Lake, South River, Opeongo, one near the boundary at Aylwin Lake and three along the Canadian Northern Railway. All these are good substantial buildings. Several of the other shelters have been re-roofed. This work is done by the rangers during the summer months.

I am especially glad to report no damage from fire during the past year. Several fires were started, but the rangers got them out before they had time to do any damage. The tank car was not called out at all this season. The telephone line was a great assistance to us in getting to fires promptly.

A large quantity of wood for fuel was cut by the contractors and our staff during the past season as follows: By contractor C. McConkey, 622 cords, all of which is drawn out to the siding at Rainy Lake ready for shipment; by contractor Ivol, 4,785 cords, all delivered at Potter Lake siding ready for shipment; by Randolph Macdonald Company, at Canoe Lake, 1,253 cords, drawn out to Canoe Lake siding and 409 cords left in the woods to be drawn out during the winter of 1920. Of the wood cut at this point, 15 cars have been shipped containing 239½ cords. At Source Lake siding (M.P. 306) the Macdonald Company has drawn out 6,016½ cords and left 3,272½ cords in the woods yet to be drawn.

Of this wood 72 cars have been shipped out, representing 1,165¾ cords, making a total cut by the Macdonald Company of 10,951 cords, of which there remain at the siding and in the woods 9,545½ cords. At headquarters we took out with our own men and some hired help 1,544 cords, 63 cars of which were shipped containing 1,003 cords, the balance, 541 cords, being drawn out to the sand pit siding ready for shipment. During the summer some of the staff were stationed at each of these points to guard against loss by fire. Water barrels were also placed along the line of railway: these our men kept full of water, our greatest danger being from passing trains. We did not, however, lose a single cord. I would strongly recommend that all this wood be disposed of during the coming winter. It is now in fine shape, but if left another season will deteriorate on account of dry rot, etc. That left in the woods should be drawn out on the first snow.

Considerable work was done by our men at headquarters. The water system has been extended so that we have a hydrant convenient to all the buildings. The two houses and all the outbuildings were painted, and the year's wood and ice cut and put in. The telephone line too was kept in order. We had very little poaching. Fines were imposed to the amount of $150.00 after our men got back to their beats, but before that poachers took advantage of the fact that our men were away cutting wood.

I should like very much to see a good public hall erected here. It could be done at comparatively little cost, our men doing the work during the summer months. Such a place is badly needed for holding court, and during most of the year we could have divine service, had we a place suitable, as several ministers spend a great deal of time here. It would be convenient for public meetings and lectures, holding poll and many other ways. The Government furnish large dancing pavilions in much less important places. We do not want anything for that purpose, but we do need a good hall badly. I trust you will give this matter favourable consideration. The principal expense would be for material. We have hundreds of visitors here from all over the globe, and I am confident such a building would be much appreciated.

On the limits acquired by the Government from the Munn Lumber Company in the Park, there are many million feet of the choicest hardwood. This has now become valuable, and I would strongly recommend that some arrangement be made whereby the matured timber could be judiciously taken out and the Province get the benefit of the revenue. After timber matures there is no advantage in leaving it stand, as it soon becomes diseased and the younger timber becomes infected also. There is a very fine growth of young timber all through the Park. The timber to be taken out would consist of birch, maple, beech, ash, elm in small quantities, and hemlock, spruce and balsam. A lot of this timber would be convenient to the mills at Whitney and Belwood: the remainder would best be manufactured by a portable mill. Or the whole could be sold to one party and mill moved as the timber was cut out. There is such a large territory of the finest hardwood, that it should be easy to dispose of it to good advantage.

Yours very truly,

(Sgd.) G. W. Bartlett,
Park Superintendent.

Honourable G. Howard Ferguson,
Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 38.

QUETICO PROVINCIAL PARK.

SUPERINTENDENT'S REPORT.

KAWENE P.O., October 31st, 1919.

HONOURABLE SIR,—I beg to submit my report for the fiscal year ending October 31st, 1919.

The staff consisted this year of ten rangers, and this I think is not enough to patrol the area properly. During the season the water has been exceptionally low, making canoeing much more difficult, and necessitating the cutting of many new portages and building of small dams. The Eva Lake narrows became so low that it precluded the passage of our barge with supplies, and to overcome this difficulty I had a dam built on the outlet which will hold the water at a normal level, thus preventing trouble in the future.

Some small fires occurred in the Park this summer, but little damage was done, as they ran in old cuttings mostly, and were got under control before reaching timber of value. These fires were caused by lightning, except one which no doubt was due to a campfire left burning, but we could not ascertain which of three parties was responsible.

Influenza caused us much worry and trouble in the forepart of the season. Ranger Harry Mack contracted the disease, and died on Basswood Lake although he had every attention and the best medical aid available.

Moose are very numerous and may be seen anywhere. Deer are also increasing rapidly. Very few moose calves have been seen this summer. This has been remarked by many in the vicinity, but is as yet unaccounted for. Beaver-dams may be found on nearly all lakes and rivers. Smaller fur-bearing animals are also increasing. Seven large timber wolves were brought in by my rangers last winter for which they received bounty. No doubt many more were killed although not found. These animals are terribly destructive on deer, especially in the spring when a crust forms on the snow. The carcasses of deer partially devoured are often seen, and at this time of the year the wolves seldom visit the carcass a second time, preferring to kill a fresh victim.

Suitable men for rangers have been very hard to get this year, there being a great demand for bushmen in this section. The Shevlin-Clarke Co., of Fort Frances, are operating five lumber camps in the Park this season, mostly in the vicinity of Quetico and Beaverhouse Lakes. Their output will be about twenty millions.

We have had two very heavy snow storms since October 21st, followed by cold weather, which stopped canoeing and blocked our trails with snow-laden trees. All my available men have been working to clear our telephone line and a trail to Kawene.

I am preparing to take a quantity of beaver and other fur from the Park as instructed by you and expect a goodly catch.

One hundred and ninety-five dollars have been collected for Fishing and Guides' Licenses this year, and no doubt many more tourists would visit here were it more easy of access to the railway. I have received some communications

from officials of the C.N.R. Company regarding accommodation for tourists at Kawene station, but nothing definite has been proposed.

I have the honour to be, Sir,

Your obedient servant.

(Sgd.) HUGH MCDONALD,

Superintendent Quetico Park.

HON. GEORGE HOWARD FERGUSON,

Minister of Lands, Forests and Mines,
Toronto, Ont.

Appendix No. 39.

COLONIZATION AND IMMIGRATION.

To the Honourable G. Howard Ferguson, Minister of Lands, Forests and Mines, Toronto, Ontario:—

SIR,—I have the honour to submit the following report of the Bureau of Colonization for the fiscal year ending October 31st, 1919:

Number of letters received	9,381
Number of letters sent out	7,781
Literature dispatched includes—	
"A New Land Nearby"	28,568
"Farming Opportunities in Ontario"	
"Hints to Settlers in Northern Ontario"	
"Ontario Handbook"	
"Greater Ontario"	
"Heaton's Opportunities in Ontario"	
"The Province of Ontario in the War"	
Ontario maps	7,177
Railway certificates issued to settlers proceeding to Northern Ontario (including 821 adults and 50 children)	725

The above figures, compared with those of last year, are indicative of the growing interest in Old and Northern Ontario, particularly the latter. Our new booklet, "Northern Ontario," was circulated extensively during the year, and we conducted our usual newspaper and magazine advertising, but apart from these mediums there has been an appreciable increase of enquiries from homeseekers and others, mainly from the Western Provinces, the U.S.A. and Great Britain.

Our Northern Ontario exhibits at the Canadian National Exhibition, Toronto, and the Central Canada Exhibition, Ottawa, proved greater features of attraction than ever before. Continuous streams of interested visitors called daily and our representatives dispensed information on the possibilities of the North in general. A free-to-all motion picture show exhibiting the industries of the North, such as agriculture, mining, lumbering, fishing, etc., also accompanying lectures by a representative gave the visitors, many of whom had but little knowledge of the vastness, resources or possibilities of this section of the Province, educative and

Ontario Government Experimental Plot, Ground Hog River, Northern Ontario.

Modern Barns and Silo, Northern Ontario.

interesting entertainments. After seeing the "movies" and the products, an elderly farmer exclaimed, "Those roots, vegetables and grains are wonderful. I really can hardly believe it."

Now that the war is over, the outlook in regard to immigration and colonization has been changed to a very marked degree. Through our office at 163 Strand, London, England, an energetic campaign is being carried on in the United Kingdom with a view to attracting British capital, farmers, farm labourers and domestic servants to our Province. There can be no doubt that considerable capital, as well as many settlers, will be the result of advertising, lectures, correspondence and personal interviews, as well as the distribution of thousands of pieces of literature, together with the "boosting" that our soldiers gave Ontario while abroad. Our Agent-General advises me that his office is besieged daily by intending settlers and that his staff are forced to work overtime distributing information. The work, of course, is confined mainly to securing farm labourers and domestic servants. For a good many years this office has proved of great use in connection with migration of people from Great Britain who desire to make new homes for themselves in Ontario. A very efficient organization has been perfected for assisting emigrants in their journey to Ontario. From time to time personally conducted parties are arranged, each under the care of an experienced traveller. The first of these parties, since the beginning of the war, recently arrived, consisting of sixty-three domestics. These girls were as fine a type of womanhood as could be wished for, and all, I am sure, will prove their worth.

During the coming year of reconstruction this Bureau will undoubtedly be instrumental in playing no small part in the upbuilding of this, the banner Province of the Dominion.

I have the honour to be, Sir,

Your obedient servant,

H. A. MACDONELL,

Director of Colonization.

Toronto, October 31st, 1919.

Appendix No. 40.

REPORT OF THE FORESTRY BRANCH, 1919.

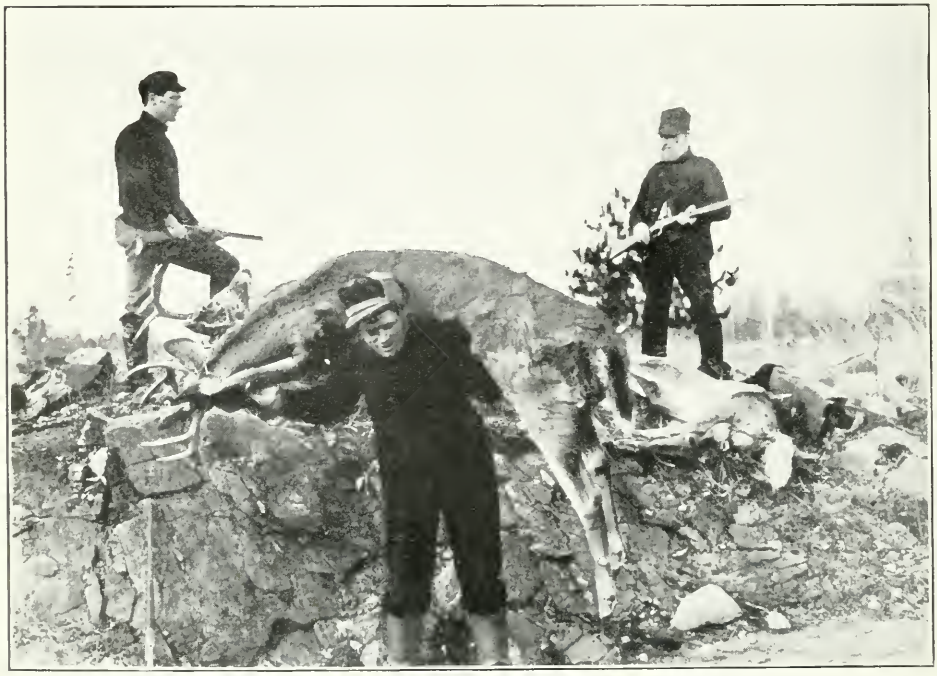
SIR,—The report of the work of the Forestry Branch for the year ending 31st October, 1919, is given under the three sections of Forest Protection, Reforestation and Forest Pathology.

I. FOREST PROTECTION.

(1) *Legislation.*

The past season is the third during which this Branch has been charged with the work relating to The Forest Fires Prevention Act of 1917. No changes have been made in the Act since the last annual report, but this season's experience

Twenty-five Cords of Pulpwood, Northern Ontario.



Trophies of the Deer Hunt, Northern Ontario.

indicates that amendments in two directions are desirable. In some instances this summer it was found that local labour could not be engaged to fight fire no matter what wage was offered, and such cases should be provided for in the Act by a compulsory clause. Most modern forest fire legislation contains such a provision. A further amendment is needed to cover deliberate defiance of the Permit Regulations. At present infringements can be punished by a fine only, and this becomes merely nominal, in fact cheap land clearing, under certain conditions. Accordingly the power of imprisonment should exist in the Act to serve as sufficient deterrent.

(2) *Organization and Personnel.*

For administrative purposes the forest region of Ontario is divided into four inspectorates, as follows:

(1) Western Inspectorate—Rainy River, Kenora, Thunder Bay.

(2) Northern Inspectorate—Timiskaming (exclusive of Timagami), Clay Belt area in northern Algoma.

(3) Central Inspectorate—Algoma, Sudbury, eastern Timagami, northern Nipissing.

(4) Southern Inspectorate—South of French and Mattawa Rivers.

The above territory was handled as 30 ranger districts with a field force composed of: 1 Superintendent, 4 Inspectors, 30 Chief Rangers, 49 Deputy Chief Rangers, 1,014 Rangers (during peak of season).

The fire season opened late, the weather being comparatively wet, so that men went on duty slowly. In April, a small force was engaged in getting equipment ready and the work as a whole organized. On May 1, there were 152 on the pay lists, and this number was slowly increased so that by the middle of May one-half of the staff were on duty, and by the end of the month the force numbered 900. This represented a considerable saving as compared with May of last year. During the critical months of June, July, and August the staff averaged 1,014 men daily. With September the weather once more became favourable, and the field force was gradually reduced, being down to half strength by the 18th, and numbering 126 by September 30. A small number was kept on at work into October to overhaul and store equipment.

The average daily force was: During April, 26; May, 548; June, 1,007; July, 1,025; August, 1,009; September, 611; October, 29. The total number of persons employed for at least a part of the season was 1,338; of these, 276 resigned after a time, and 51 were dismissed for various reasons.

The expenditure for the fiscal year was as follows, the figures for 1918 (rounded off) being given for comparison.

CLASSIFICATION OF EXPENDITURE, 1919

—	1919	1918	—	1919	1918
	$ c.	$ c.		$ c.	$ c.
Pay roll	405,212 30	416,500 00	Extra fire fighting	53,863 92	1,445 00
Equipment	22,899 02	28,350 00	Express, postage, etc.	5,646 47	5,365 00
Expendable property	13,903 06	10,700 00	Miscellany	5,955 02	.....
Travel (Inspection)	15,826 37	13,440 00			
Improvement work	4,765 35	4,280 00	Total	528,071 51	480,080 00

Against this total stands the fire tax collected from licensees. Geographically the expenditure was approximately, thus:—

Central Inspectorate	41%
Western Inspectorate	22%
Northern Inspectorate	21%
Southern Inspectorate	16%
	100%

(3) *Fires.*

The summer of 1919 was characterized by an unusually prolonged drought and the fire season was a bad one. The early part of May was wet, but after that came three months which were abnormally dry. Under such conditions fires became more numerous than usual, and also assumed much larger proportions. This is seen in the number of fires reported for June, July and August—414, 613, and 377 fires respectively—as against 296, 141 and 192, the average for 1918 and 1917.

The situation became serious first in the Clay Belt region. From the settlers' point of view this season was more satisfactory than either 1918 or 1917 for land clearing operations, because conditions were favourable to a "good burn." From the nature of things the activity in land clearing increases as the weather conditions develop which render it more dangerous. Thus, almost as many permits were issued in the first half of June as were granted during the whole of that month last year. It must be kept in mind that the welfare of such new agricultural settlements is bound up with land clearing by fire, and it is necessary to adopt a considerable latitude of risk in order not to hamper pioneer farming operations unduly. In an average year one counts on occasional showers which help to extinguish the dying fires which are seldom absolutely out when the permit expires. But this season it was otherwise. The situation developed rapidly, for some 4,300 fires had been set out under permit, a large percentage of which had not died out after the ordinary way. By June 21, existing permits had been cancelled and the issuance of new ones stopped. No rain fell, however, till the early part of August. The result was that old, clearing fires gradually enlarged and met, and that sparks from these set fresh areas of slash on fire. Added to these, of course, was a larger number than usual due to railways, campers, etc. The situation was enlarged by certain persons taking advantage of the existing confusion to defy the permit suspension order. In fact, the number of fires reported from the Northern Inspectorate, despite the small area, reached almost one-quarter of the number for the Province. The situation was aggressively faced and fires fought vigorously everywhere. The long drought, however, made water scarce in many regions, and even the peaty soil turned up in trenching around fires at last became a case of merely adding more fuel. Considerable loss in buildings and crops occurred, but no loss of life. There is no doubt that the permit system in enabling control of setting out fire averted a more serious result.

The total area reported burned over in the Northern division was 58,383 acres or 6.3 per cent. of the whole for the Province. Considerable of this acreage had been previously burned in 1916 and 1911. The largest fires were in the Cochrane and Timmins ranger districts. Among the townships suffering most were O'Brien, Shackleton, Calder, Leitch, Blount, Clute, Lamarche, Brower, Fox, Newmarket, Dundonald, Matheson, Bristol, Ogden, Mountjoy and Tisdale. In the

Matheson ranger district the townships of Clergue, Carr, Playfair and Pacaud had considerable fire.

But while much damage was done in the Northern Inspectorate it was relatively insignificant when one turns to a consideration of the fire record in the Central Inspectorate. The fires in the north were largely on lands being cleared or which will eventually be cleared for farming purposes. From the one standpoint of the timber supply of the Province they are of less concern than in the case of those regions which are to remain centres of timber production. The Central Inspectorate embraces roughly the middle portion of the white pine belt in Ontario, and little of the soil is suited to agricultural pursuits. Fire in this region means not only the loss of standing timber, but also the growing crop for future logging.

In this inspectorate the area reported burned over totalled 618,496 acres. The largest fires occurred in the Chapleau, Sudbury, Webbwood and Soo Ranger Districts. In the strip of country between Lake Nipissing and Sault Ste. Marie, lying south of the Mississagi forest reserve, approximately 522,000 acres were reported burned over—in other words, around 13 per cent. of this region. Large general fires occurred in the townships of Curtis, Gillmor, McMahon, Morin, 201, 195, Bridgland, Wells, Grassett, 182, 175, 169, 168, 167, Mack, Striker, 145, 144, 143, Proctor, 132, 131, 130, 129, 120, Bigelow, Dunlop, Merritt, Craig, Moncrieff, Totten, Cascaden, Trill, Dowling, Foster, 91, 90, 83, 82, 10, Blezard, Neelon, Dill, Dryden, Cleland, Burwash, Street, Hawley, Hagar, Appelby, Latchford, Bertram. In quite a number of cases whole townships were swept over.

The Western and Southern Inspectorates also suffered severely—to the extent of 181,458 acres and 63,824 acres, respectively. In the former, the Nipigon, Rainy River and Thunder Bay districts suffered most; and in the latter, Muskoka and Parry Sound.

The total area reported burned over in the Province in 1919 was 922,161 acres, or 1,441 square miles. It is hard to realize what such an area is, but a conception may be formed by trying to visualize a strip of country six miles wide from Toronto to North Bay.

No complete estimates of the loss are available. Included in the total burned area are 247,266 acres of land classed as timbered, mostly with white pine. At the extremely low estimate of 1,000 feet per acre, this would mean as much timber as the Province received dues on last year. Of course, some of the damaged timber will be salvaged. Heavy losses were also sustained by lumber concerns by the burning of camps, logging equipment, supplies and sawmills. These losses, of course, must ultimately be passed on to the consumer.

In addition, there were burned over 251,355 acres classed as "logged over with some timber left," and 233,196 acres of young growth; in other words, around 485,000 acres of cut-over lands. The loss here is very high because it means the wiping out of a large potential crop without any salvage. To put that crop back artificially by planting would take at least $5,000,000, to say nothing of the loss in time as represented in the age of the burned stands of young trees.

Before going into a discussion of the situation presented above it may be well to point out that forest protection in Ontario has three distinct phases. In the Clay Belt country the yearly expenditure is proportionately high because of the permit system and the scattered nature of this work. It is not justifiable on timber account alone, because most of the region will not be kept as a permanent timber area, but will pass to farming. A part of the cost of protection in this

district is chargeable to making life and property in general safe. Another phase appears in connection with land under license; here the lumberman's timber must be protected because he pays a fire tax, while the Crown is further interested in the unmerchantable young growth on the limit. The third phase is to be found in the immense area of cut-over land, largely reverted to the Crown. Protection of this is necessary if we are to have any timber from which to derive revenue in the future. In fact, expenditure on this account is more justifiable than for unlicensed timber, because it is usually possible in case of fire damage to arrange for logging the latter at once. Adequate protection of cut-over lands is expensive, because they are acreages of the highest hazard owing to the logging slash. For the same reason the fires are extremely hot and resulting damage to the young trees is high. The only definite information that we have regarding the effect of repeated forest fires upon the restocking of pine lands in Ontario is derived from a report on a study, a few years ago, of 85,000 acres in the southern part of the pinery. This study showed that the numbers of young pine trees one inch and above in diameter surviving after fire were as, 110, 14, 7 and 3 trees per acre, according as the area was burned severely, once, twice, three or many times. These figures demonstrate the great damage done by fire to cut-over lands. As already pointed out, some 485,000 acres of such lands were burned over this season. Protection of this type of forest land is by far the cheapest method of producing forests, even if general tree planting were within the financial ability of the Province.

Classification of Forest Fires, 1919.

By Month	1919	By Origin	1919		1917–1918 average	By Size	1919		1917–1918 average
	No.		No.	%	%		No.	%	%
May	362	Settlers	137	7.7	8.2	¼ ac. and under	543	30.5	38.4
June	414	Campers	163	9.2	11.2	Over ¼ to 5 ac.	493	27.7	26.6
July	613	Railways	659	37.0	48.0	Over 5 to 10 ac.	109	6.1	5.4
August	377	Lightning	54	3.0	3.3	Over 10 to 100 ac.	293	16.5	11.6
September	14	Logging operations	44	2.5	4.1	Over 100 to 500 ac.	155	8.7	4.9
		Miscellaneous	76	4.3	4.1	Over 500 ac.:			13.1
		Unknown	647	36.3	20.5	500–1,000	58	3.3	
						1,000 to 10,000	105	5.9	
						Over 10,000	24	1.3	
	1780		1780	100.0	100.0		1780	100.0	100.0

Railway Fires.—Of the fires occurring along railway lines, 659 fires were attributed to railway origin, either defective locomotives or employee carelessness. This was 37 per cent. of the total number of fires reported for the season, a gratifying improvement over the record for 1918 and 1917. But, as the table of locomotive inspections farther on shows, there is opportunity for better results yet, since there is no reason why all companies cannot reach the standard of the best one in this respect.

FIRES OF RAILWAY ORIGIN, 1919.

Railway	Mileage forest section	No. of fires	Per cent of railway fires
C.N.R. (exclusive of Transcontinental)	1,455	162	24.6
C.N.R. (Transcontinental)	950	171	25.9
C.P.R.	1,430	173	26.3
T. & N.O.	253	118	17.9
G.T.R.	375	23	3.5
A.C. & H.B.	330	10	1.5
A.E.	95	2	0.3
	4,888	659	100.0

Other Causes.—The tourist, surveyor, prospector, fisherman, berry picker, picnicker, etc., were responsible for 9.2 per cent. of the total fires. Settlers caused 7.7 per cent. of the fires. In all, 23 persons were prosecuted for violations of the Permit Regulations, and convictions secured in 20 cases. The percentic increase in fires whose origin was not determined is a direct result of the general fire conditions of this season.

Area Burned.—Thirty per cent. of all fires did not exceed one-quarter acre in size, and nearly 60 per cent. of them did not get beyond 5 acres in extent. The corresponding figures for last year were 40 and 75 per cent. respectively. Over 10 per cent. of the fires exceeded 500 acres.

The total area reported burned over was 922,161 acres, classified thus:—

Timber land	247,256 acres	(26.8%)
Cut-over land (with some timber left)	251,355 "	(27.3%)
Young growth (below 6 inches diameter)	233,196 "	(25.3%)
Barren and grass land	190,344 "	(20.6%)
	922,161 acres	100.0%

CLASSIFICATION OF FOREST AREAS BURNED OVER, 1919

Ranger District	Number of fires	Timber land mainly coniferous (i.e.softwo'd)	Timber land mainly hardwood	Cut-over land, some softwood left	Cut-over land, some hardwood left	Young growth mainly coniferous	Young growth mainly hardwood	Barren land	Grass land	Totals (acres)
I. Western Inspectorate—										
1 Kenora District	49	876	.....	1,500	.....	1,493	79	2,759	23	6,730
2 Rainy River	64	15,348	250	6,000	6,000	1,020	2,649	45	11	31,323
3 Thunder Bay	103	2,520	10	6,894	228	3,313	4,138	7,034	49	24,186
4 Nipigon	18	67,863	7	.....	.....	700	.....	9,030	7	77,607
5 C.G.R.—Western	79	2,240	.....	.....	.....	686	3	816	21	3,766
6 C.G.R.—Central	92	54	.....	.....	.....	10,456	3,420	23,906	10	37,846
	405	88,901	267	14,394	6,228	17,668	10,289	43,590	121	181,458
II. Northern Inspectorate—										
1 Hearst	14	176	.....	.....	569	.....	.....	10	.....	755
2 Cochrane	212	2,264	12	982	.....	1,087	777	6,472	131	11,725
3 Abitibi	11	236	.....	2,072	.....	75	5	3,078	6	5,472
4 Timmins	23	1,075	.....	11,676	60	307	.....	14,206	2	27,326
5 Matheson	94	631	.....	344	260	332	445	2,778	18	4,808
6 New Liskeard	61	1,836	21	1,240	100	1,125	448	3,518	9	8,297
	415	6,218	33	16,314	989	2,926	1,675	30,062	166	58,383
III. Central Inspectorate—										
1 Soo	40	21,202	2,040	10,520	34,440	9,230	19,160	2,920	17	99,529
2 Webbwood	56	75,310	19,630	40,515	95,338	44,370	44,945	36,251	19	356,378
3 Sudbury	80	6,032	1,500	5,867	3,050	7,854	27,190	14,615	13	66,121
4 North Bay	80	6	29	500	501	413	741	1,828	12	4,030
5 Mississagi	19	15,365	300	3,564	.....	18	.....	40	2	19,289
6 Chapleau	71	2,262	300	2,295	.....	11,291	7,981	22,566	6	46,701
7 Foleyet	111	201	.....	4,025	.....	104	458	4,071	5	8,864
8 Timagami, W. & S.	13	151	.....	1,920	7,040	1,436	.....	2,720	3	13,270
9 Timagami, East	15	53	.....	.....	.....	14	7	.....	1	75
10 Timagami, North	21	407	.....	40	11	130	153	3,467	1	4,209
11 T. & N.O., South	82	.....	.....	.....	.....	.....	1	17	12	30
	588	120,989	23,799	69,246	140,380	74,860	100,636	88,495	91	618,496
IV. Southern Inspectorate—										
1 Parry Sound	63	2,380	7	1,650	868	3,204	4,280	3,057	14	15,460
2 Muskoka	70	2,501	58	880	.....	8,752	4,113	18,672	149	35,125
3 Algonquin, North	87	826	.....	.....	.....	190	649	1,168	59	2,892
4 Algonquin, South	63	830	.....	400	6	112	398	3,443	7	5,196

5 Madawaska	14	25	27	.....	.....	2,022	202	891	14	3,181
6 Trent	70	352	53	.....	.....	16	1,177	121	16	1,735
7 Eastern Reserve	5	.....	.....	.....	.....	2	25	202	6	235
	372	6,914	145	2,930	874	14,298	10,844	27,554	265	63,824
Totals	1,780	223,022	24,244	102,884	148,471	109,752	123,444	189,701	643	922,161
Per Cent	.....	24.2	2.6	11.2	16.1	11.9	13.4	20.6	0.07	100.00
1918 Totals	965	3,123	1,634	5,661	5,513	1,797	5,303	6,465	676	30,172
1917 Totals	1,110	73,160	135	148,408	2,160	61,806	13,202	82,959	2,334	384,164

(4) *Permits.*

Forest protection in a considerable portion of the northern Clay Belt is largely effected through control of land clearing fires by the permit system. This system is costly, since a large force of rangers is required owing to the scattered nature of the work. Permits were issued in 136 townships. This is not such a large area if the work were consolidated, but scattered townships require the same number of men to issue permits whether the number used in a season be large or small. For instance, there were 80 townships in which not over 25 permits per township were issued in the whole season; and there were only 25 townships in which more than 100 permits each were called for. As time goes on, however, and a township becomes more cleared and mostly patented, there seems no reason why the municipality should not be called upon to provide for the protection of its own property.

The number of permits issued the past season was relatively small since the weather and fire conditions led to the general suspension of permits from June 21 until into August. During that period permits were issued only in a few localities where conditions made it safe. In all, 6,635 permits to burn over 26,790 acres were issued, as compared with 9,590 permits in 1918, and 3,486 in 1917.

Statement of Permits, 1919.

Ranger District	Number of Permits		Area Burned Over 1919
	1919	1918	
Cochrane	2,275	3,493	5,437 acres
Matheson	1,691	2,346	4,760 "
New Liskeard	1,557	2,179	13,521 "
Hearst	702	514	1,379 "
Timmins	199	651	925 "
Remaining 11 districts	211	407	768 "
	6,635	9,590	26,790 acres

Monthly Summary of Permits, 1919.

Month	Number		Area 1919
	1919	1918	
May	1,536	2,248	5,636 acres
June	2,786	2,899	12,607 "
July	496	2,050	2,197 "
August	1,475	2,156	5,333 "
September	342	237	1,017 "
	6,635	9,590	26,790 acres

For infractions of the Permit Regulations 23 persons were prosecuted, and convictions secured in 20 cases. As already pointed out, it is desirable that the Act be amended to allow a jail sentence in flagrant cases.

(5) *Improvement Work.*

The character of the fire season permitted very little attention to new projects along the lines of improvement work. Time was found for very little telephone, trail or cabin construction. The new headquarters buildings for the Nipigon reserve were completed, an equipment storehouse built at Fort Frances, and a combined storehouse and boathouse at Kenora.

(6) *Equipment.*

With the opening of this season steps were taken to have all equipment, such as canoes, railway velocipedes, etc., and buildings painted the same colour and after a uniform pattern. Also all equipment was stencilled "Ontario Forestry Branch," and branded or stamped "O. F. B." with steel letters. In addition, all main articles of equipment such as canoes, boats, railway velocipedes, railway motor cars, tents, etc., were numbered on a definite system, to facilitate keeping records and to learn the life of different manufacturers' goods.

The major equipment added this year included: fifty canoes, seven large power boats, eighty tents, four hundred pairs of blankets, forty-five railway velocipedes, three railway motor cars.

The total equipment necessary for such a large organization requires the maintenance of about $100,000 of stock. The Branch now has 10 Ford auto trucks, 10 power cruisers (30 feet and over), 6 smaller power boats, 400 canoes and small boats, 65 railway velocipedes, 8 railway motor cars, 430 tents, 2,000 pairs of blankets, 5 portable fire pumps with 7,700 feet of hose, besides very large numbers of camp stoves, axes, shovels, tools, cooking utensils, etc. There is still a shortage in spare equipment which should be on hand for emergency crews of fire fighters.

It may be in order to point out that provision for storage of such a large equipment calls for much space. Considerable warehouse space is rented yearly, but the following storehouses have been erected during the past three seasons: Gowganda, Gogama, Bisco, Cochrane, Nipigon, Fort Frances, Kenora. In addition to the above seven main storehouses, a number of boathouses, railway motor car houses, truck garages, hose houses, etc., have been built.

In addition to the usual quantity of fire signs, 12,000 calendars and 10,000 pencils with 10,000 rulers were sent out for educational effect. The calendars were of two types, one specially designed for distribution in the Clay Belt, and the other for tourist country. The pencils and rulers bearing appropriate fire warnings were placed in all the northern schools.

(7) *Railway Inspection Under B. R. C.*

Two inspectors devoted their whole time to the inspection of fire protective appliances on locomotives, because of the large percentage of fires of railway origin. The railway mileage through forest section in Ontario is very great, approximately 5,000 miles, and more locomotive inspections are made in this Province than in the other provinces of Canada combined. A change was made for the past season in the basis of payment for inspection, with the result that 10 per cent. more inspections than in 1918 were made in 80 per cent. of the time, so that the average cost per inspection fell to $2.07 as compared with $2.59 in 1918.

LOCOMOTIVE INSPECTION, 1919.

Railway	Number Inspected — Times					Total Number Locomotives	Total Number Inspections			Inspections Showing Defects	Percentage Defective		
	1	2	3	4	5		1919	1918	1917	1919	1919	1918	1917
C.P.R.	114	96	48	11	1	270	499	448	328	149	29.9	36.4	19.5
C.N.R.	78	47	30	10	3	167	317	232	154	49	15.5	22.4	39.6
G.T.R.	80	28	5	1	....	114	155	184	60	17	11.0	28.3	20.0
A.C.	7	8	....	....	....	15	23	36	37	3	13.0	38.8	45.9
A.E.	....	1	1	2	1	5	18	20	36	3	16.7	70.0	55.5
						571	1,012	920	615	221	21.8	32.1	28.3

Average cost per inspection $2.07 (as compared with $2.59 for 1918)

In all, 1,012 inspections were made of 571 locomotives, and of these, 221 inspections or about one in five showed fire protective appliances defective in one respect or another. This is a decided improvement over the years 1917 and 1918 for which the average was 30 per cent. defective. Further, the record for this year would have been very much better if the C.P.R. had kept its engines up to the standard of the other roads. C.P.R. locomotives were defective to the extent of almost 30 per cent., and in 1918 it was 36.4 per cent. If one road can keep its defective locomotives down to 11 per cent. of inspections, it should be possible for all other roads to reach the same record: the matter is entirely one of organization. This matter is of extreme importance in Ontario because of the large number of fires of railway origin.

Because of the unsatisfactory results in past seasons with special patrolmen put on by the C.N.R. between Pembroke and Nipigon as a Board requirement, this year it was arranged that the Forestry Branch take over the work, the company paying part cost. The arrangement has been justified by the relatively low fire damage along the C.N.R. this season.

Thirty-six inspections of locomotives on private lines used in logging, etc., were made and the owners required to be brought up to the equivalent of B. R. C. specifications under authority of the Provincial Act.

(8) *Summary.*

The disastrous fire season we have experienced calls for a close examination. The season was undoubtedly a difficult one for fire control, but this Branch feels that such a record is below the attainable: certainly it is below the average of several organizations protecting forest areas of similar magnitude.

As to origin of fires, a study of our statistics for the last three years shows a general uniformity. Apparently we may expect the following situation as regards causes:

About 8 per cent due to land clearing
10 " " " " neglected camp fires
3 " " " " lightning
3 " " " " summer logging
5 " " " " other known causes
45 " " " " railways
26 " " " " unknown causes

A reduction in the number of fires traceable to carelessness in land clearing and as regards camp fires will be a matter of slow education. Lightning fires as a rule do not reach large proportions. While fires caused in summer logging show a small percentage, these fires are frequently very costly. To reach the camps in operation it is necessary to pass over tote roads which are frequently piled up with slash from the previous season's operation. The question of general slash disposal should be considered, but in the meantime regulations should be adopted requiring the disposal of slash along main tote roads, about camps and dump grounds. Summer operators should also be required to give special assistance in fire patrol during dangerous periods.

The machinery for reducing railway fires exists. Various protective measures are required of the railways such as special patrol, clearing the right-of-way and keeping up proper protective appliances in locomotives, yet within a few feet of the right-of-way timber operators are allowed to create fire hazards which make fire prevention almost impossible when small grass fires get away from the right-of-way. Again, slash disposal within reasonable distance of railways is imperative if the problem is to be solved. Accordingly, we conclude that the problem is one of eliminating the causes as much as possible and then controlling fires which do get a start.

The public as a whole seem very slow to realize that forest fire protection differs in no way from general property fire protection as provided for in cities. The same principles underlie both—reduction of inflammable hazard, familiarity with conditions in all parts of the area under protection, early detection and speed in reaching the scene of the fire, and fighting by men specially trained for that work. Applying these in turn to forest property, we note that the hazard must remain high till the operation of logging carries with it as an integral part the disposal of the slash nuisance it creates. Early detection and early fighting is a matter of lookout towers, telephone systems, and strategic systems of roads and trails: while fighting forest fires is no more the work of an amateur than fighting city fires.

These considerations lead to the argument that forest protection calls for specially qualified men. The direction of the protective work in any district must be in the hands of a man who knows the basic principles of fire protection: who will make it his business to become thoroughly familiar with conditions of timber, hazard, settlement, etc., in every part of his district: who is capable of planning and constructing a system of lookout towers, telephone lines, roads, trails, etc., so as to make his district relatively safe at the least cost. Along with these, he must be able to follow instructions, to give an intelligent report on any field matter, to estimate burned timber, to administer the forest laws, Railway Act, etc. In short, he must have been previously trained in the principles and work of forest protection.

Turning to the existing system in Ontario, we find that each spring a temporary organization of around 1,000 men is built up, only to be disbanded every fall. During the last three seasons about one-half the ranger force has been new, inexperienced men each year. Any protection system must depend upon a permanent skeleton organization for efficiency. Moreover, this skeleton force must be made up of men with capabilities of the order outlined in the preceding paragraph. This is impossible if appointments are made on any other basis than the applicant's fitness for the work.

Forest fire control in Ontario will be at a standstill until it is recognized:

(1) That forest protection is a specialized business requiring a permanent trained organization, and

(2) That no organization can give efficient service without the adoption of the merit system in making appointments and promotions.

II. Reforestation.

Reforestation is a term which is used in Ontario, in rather a loose way, with various meanings. Reforestation is frequently spoken of in a broad way to mean the regulation of timber operations to protect the young or second growth; that is, securing a new crop by leaving parent seed trees or undersized young growth which will eventually develop a future harvest. This may be spoken of as natural reforestation to distinguish it from artificial reforestation where a new crop is secured by planting either seed or young plants.

Ontario presents two distinct problems in regard to reforestation:

The securing of continuous wood crops on the Crown lands of the Laurentian plateau which comprise at least fifty million acres of northern Ontario.

The reforesting of the larger waste areas and assisting and encouraging the private waste land and woodland owner of southern Ontario.

The writer believes that artificial reforestation in the Laurentian plateau of the north is not feasible at present, although many districts within this region are at present almost destitute of the more valuable species such as pine and spruce. Before any consideration can be given this problem we must secure some assurance of reasonable protection for this area. Owing to the excessive cost of artificial reforesting we must do everything possible to regulate timber operations so that natural reproduction will be given some chance to insure future crops. During this last season we have had whole townships swept over with fire. To re-stock a thirty-six square mile township with pine or spruce would cost at least $100,000.00. Our first problem in the forest regions of the Laurentian plateau is to secure a forest organization which will give adequate fire protection and regulation of cutting in order to insure natural re-stocking.

Turning to the problem in southern Ontario, where the land has largely left the Crown, we find that there exists only about 9 per cent. of woodland of inferior quality with many townships having less than 5 per cent.

In addition to the inferior wood lots and smaller waste areas of the farm, there exist throughout older Ontario many large areas of waste land almost devoid of tree growth, and in many cases composed of blowing sand.

While the industries of southern Ontario must largely depend upon the north for timber supplies, yet it is imperative that an effort be made to reforest these local waste areas if we are to secure a future wood supply. The writer believes that this problem can best be solved by the creation of demonstration forest stations throughout older Ontario similar to that now established in Norfolk county. These stations will not only reclaim waste lands but will supply planting material to private owners and will be a local demonstration of reforestation.

At the provincial forest station in Norfolk County we have about three hundred acres of forest plantations in various stages. These plantations are thriving and have become splendid demonstrations of what may be expected from work of this kind. The influence of this work is demonstrated in the fact that a large number of private owners in this district have taken advantage of the government

distribution of trees and have made some very good plantations on waste portions of their farms.

This last autumn a three-acre mixed hardwood plantation was made with the intention of experimenting on the relative values of the various hardwoods in artificial reforesting.

During the past season about forty thousand trees were shipped out to private planters. This is far below our pre-war output as our distribution at one time had reached about half a million trees. We have had difficulty in securing reliable seed of the kind of trees desired in connection with this work and it will take at least two years to reach a reasonable supply of nursery stock.

The work at this station, which has been held up during the war, should now be placed on a better basis. This will require improvements in buildings, a better watering system, more seed bed areas, in fact, a general enlargement of the plant if the growing requirements for trees are to be met.

The following is an approximate list of the nursery stock at the Provincial Forest Station in Norfolk County:

Scotch Pine seedlings	600,000
Scotch Pine transplants	40,000
White Pine transplants	30,000
Larch seedlings	50,000
Larch transplants	40,000
Miscellaneous conifers, as red pine, jack pine, cedar, etc	80,000
Miscellaneous hardwoods, as elm, sugar maple, white ash, black walnut, etc	100,000

In addition to the above stock, fifty bushels each, of red acorns and black walnut were collected and planted this autumn.

III. Forest Pathology.

The work in connection with tree diseases has been chiefly confined to the eradication of Ribes (currants and gooseberries) at the forest station in Norfolk and the investigations of Dr. Faull into diseases affecting trees in the Timagami region.

As indicated last year the general eradication of diseased Ribes cannot be carried out on a large scale throughout Ontario, but our efforts should be directed towards local control wherever white pine values warrant the expenditure. The work of eradication is being carried on at the Provincial Forest Station in Norfolk County. About 500 acres have been cleared of Ribes and it is expected that white pine can be grown at this station with little danger of infection. Last year the Department inaugurated work of investigation into the diseased condition of pine in the Timagami region. This work was continued this season and I am glad to report that valuable information has been obtained in respect to the "needle blight" which has become so prevalent in parts of Ontario. A report upon this work follows:

Report of Dr. J. H. Faull for 1919.

Sulphur Fumes.

In the last week of May a trip was made into Cleland Township in the District of Sudbury for the purpose of observing the effects on the coniferous forest of sulphur fumes from winter roast beds located from four to six miles distant. The same area had been visited the preceding September in order to

check over conditions with respect to the needle blight of white pine—of which at that time there was little trace. Notes were made then on individual serially marked trees with healthy new leaves for reference the following spring. The forest as a whole was found to be in a much better condition than in the spring of 1918, the date of my first inspection. None of the marked trees had undergone any visible change, their foliage looking apparently as green as in the foregoing autumn. It was reported that roasting had not been begun until after the winter had set in, and had been discontinued before the oncoming of spring thaws. It seems not improbable that where damage has resulted in the past, it has been at temperatures above that of the freezing point. Strangely enough, there appears to be no definite information in the literature based on experiments with respect to the susceptibility of white pine and others of our native conifers to sulphur fume injuries at the lower temperatures.

"Needle Blight" of White Pine.

Considerable attention was given during the summer to "needle blight" or "leaf blight" of the white pine, concerning which so many inquiries have been made by lumbermen through your office, in continuation of observations instituted in 1918. Throughout I was accompanied by Mr. A. W. McCallum, M.A., B.Sc.F., who was sent up as an observer by the Federal Government.

The "needle blight" is most abundant in the northern parts of the Province, but it also occurs in various other parts of Ontario, and in Quebec. Judging from inquiries received, it has widely attracted the attention of owners of white pine and has been the cause of some alarm. Reports of its occurrences and specimens have been sent in from Norfolk County, Barrie, Toronto, Ottawa, Nipissing District and elsewhere. The general situation, however, is better than in 1918.

The blight appeared this year in the latter half of June, just after the young needles were beginning to grow out, and as has been formerly observed was restricted to the new growth. The sequence of events was identical with the developments of 1918, although the blight developed almost a month earlier this year than last as there was a difference of about four weeks in the two seasons between the times of leafing. The new needles, usually on all parts of the tree, soon after they have emerged from the bud turn lighter in colour at the tips and then redden from their tips downwards. This process goes on for two weeks or more, the needles meanwhile growing in length from their bases; the resultant discoloration involves from a quarter to three-quarters, more or less, of each of the affected leaves. There is a remarkable uniformity in the extent of the discoloration in each tuft and each branch. No causal agent is evident in the diseased needles.

At first sight it appeared as though the blight was as severe as last year. In the Timagami Forest Reserve, where some hundreds of trees had been serially marked with metal tags or otherwise located, the frequency of blighted trees in some parts appeared to be undiminished. Thus standing on the observation tower at Bear Island and looking over miles of country all about, it was not possible to decide that there had been any marked amelioration. Everywhere there were scattered the bright reddened trees among the normal sombre conifers. A careful review was then made of the ground prepared the preceding summer.

Beginning with Rondeau Park on Lake Erie, four blighted white pines had been found there in 1918—no others were discovered. Mr. Geo. Coldworthy, the

Chief Ranger, who had accompanied me when these trees had been located, covered our course again in August and forwarded a report, backed up by specimens, showing that the same four trees were again badly blighted, and one other in the same neighbourhood.

Turning to the Timagami Forest Reserve, where in some areas a large percentage of the trees of all ages had shown the blight in 1918, and where extensive observations had been made, the results afford surer ground for the conclusions arrived at. The trees examined fall into three general classes—young trees with trunks up to 3 or 4 inches in diameter; large trees, many of them mature, with trunks 10 inches and upwards, and those that lie between. In the first instance it was found that there had been a general recovery. Thus on Island No. 976 where 75 per cent. or more had been affected in a count of all the young white pines on the eastern half of the island—a total of 400 trees, not more than 10 per cent. displayed blight this year. Those of the middle class exhibited greater variation. Some were again severely blighted, while others showed no signs of blight, and between these two conditions there were all grades. Almost invariably the recovered trees of this size were clothed with abnormally short needles, and often the foliage was scantier and paler than in healthy trees. The large trees, however, showed less than 1 per cent. recovery, and there was a mortality of about 5 per cent. Likewise there were scattered cases in this class of trees of what appeared to be new instances of blight; at all events, some vividly blighted trees were numbered for the first time that had been passed by in 1918—probably because of uncertainty as to their condition at that time.

A renewed effort has been made to discover the cause of "needle blight." As there are no causal organisms to be detected in the affected crowns, several hundred inoculations were carried out on healthy twigs of healthy trees with the juice from diseased foliage. Certain so-called physiological diseases are known to be contagious and such disorders have been communicated in this way. No results followed. The season before interlocking diseased and healthy branches of contiguous trees had been grafted at the point of contact. An examination showed that the branches had formed an organic union but that the virus, if there be one, had not been transmitted. The bark was then carefully examined throughout the entire extent of trunk and roots of diseased trees, and then stripped and the exposed wood examined. No indications of disease were manifest. The first signs of organic trouble were discovered in the root tips.

An examination of root tips of trees is an arduous business. Two methods were followed. First, the root system of a six inch blighted tree was exposed by carefully following the main roots outward from the base of the trunk carefully disentangling the branches and picking away the adhering soil and vegetation. Secondly, several isolated small blighted trees with trunks one to three inches in diameter were removed in their entirety from the shallow rock sub-soil characteristic of that region, and a number of healthy trees of similar size as checks. The root systems of these trees were carefully washed free from soil by vigorous immersion in water. A study of the cleaned roots located the seat of the trouble. The roots of the check trees were normal, the root tips were white, frequent and vigorous. By contrast the tips of the main branches of the root system of the diseased trees were almost invariably killed back from 4 to 12 inches or more. Some of the smaller lateral branches were not so clearly dead, but few appeared in good condition, and not one healthy main root tip was uncovered in the entire lot. It was at once apparent that the absorbing areas of the root system had

been destroyed. Therefore, it comes about that when there is a sudden increase in the water requirements of the plant, as at the time of leafing, the absorbing organs are unable to supply the demand; the succulent young needles are the first organs of the crown to exhibit the resulting distress. It also seems apparently sound to assume that young trees are able the more quickly to repair the damage done; and under favourable weather conditions, as in the summer of 1918, to produce new roots in sufficient amount to provide an increased, if not fully sufficient, flow of water for the growing leaves and tissues of the next season. The older, more nearly mature, trees, and especially as is so often the case if handicapped by a certain amount of butt rot, are incapable of recovery, or if so, must recuperate more slowly. It will be necessary to follow our trees of this group for a few years, and incidentally in the case of recovery to note the effect on wood accretion.

The cause of the disturbance to the root system remains undemonstrated. Drought seems the most reasonable explanation. It may be possible to test this theory out by a simulation of drought conditions and by a study of the course of these outbreaks in connection with the rainfall and temperature reports for affected districts. That severest blight occurs on shallow and on sandy soil appears significant in this connection. A more detailed account of needle blight will be prepared after the completion of the present investigation.

The following conclusions may be tentatively offered:

1. "Needle blight" is at present the most serious of the needle troubles of our white pine.

2. In some localities it will kill a good many trees and seriously retard the growth of others—to such an extent as to be reckoned with in determining the time at which a stand has attained maximum productivity.

3. It is at least a menace to young stands.

4. Young trees recover, older trees may recover though more slowly; a variable percentage of old trees die—according to observations so far, up to 5 per cent.

5. It is now possible to distinguish between sulphur fume injury, or winter injury on the one hand, and needle blight on the other.

6. The blight is not of biotic origin.

7. The blight is not a communicable physiological disease.

8. The blight is not contagious.

9. The blight is related to root injury—possibly due to drought.

Survey of Diseases of Timber Trees in Ontario.

A more extended survey was made of the diseases of the timber trees in Ontario, especially in the Timagami Forest Reserve. At least two new to science were discovered, and many not before reported for Ontario were found. Researches on some of those are now in progress. A first contribution to the list follows under the technical names of the causal agents. Collections were made of the various forms, both of the fungi and of the diseased hosts, and they have been catalogued and stored for future reference.

In addition, valuable collections have been received from the United States laboratories of plant pathology, from agents of the Canadian Conservation Commission, and the Forest Products Laboratory, Montreal, including a collection of fungi on diseased spruce pulpwood from Thorold, Ontario, and individual contributions from various other sources. Exchanges in some cases have been effected.

Balsam (Abies balsamea (L.) Mill.)

Armillaria mellea (Vahl.) Quel. Not infrequent on the roots and also found causing heart rot of trunk—the latter an apparently unreported occurrence.

Bjerkandera adusta (Willd.) Karst. A form common on hardwoods, but rare on conifers.

Calyptospora columnaris (A. & S.) Kühn. This needle rust is common on balsam, and on its alternate hosts, the blueberries (Vaccinium), in the Timagami Forest Reserve, though not especially injurious. It appears to have been reported on balsam not more than once or twice previously from America.

Coriolus balsameus (Pk.) Murr. Not uncommon on dead wood. For the first time reported as the cause of a heart-rot.

Frost injuries. A great many small dead branches on living balsams are common throughout the Timagami Forest Reserve. An examination of the bases of these branches discloses a wound apparently caused by the gnawing of some insect, at the end of the growing season. Frost presumably completes the destruction.

Fuscoporia marginella (Peck) Murr. Rare on fallen trunks.

Hyphoderma. An interesting form, apparently the cause of a needle disease.

Lophodermium nervisequum Fries. Frequent on the living needles and sometimes causing complete defoliation.

Macrophoma. Common on the needles but whether or not the cause of their death remains undecided.

Melampsorella elatina (A. & S.) Murr. This rust which is the cause of the witches' brooms on balsam is not rare.

Phaeolus sistotremoides (A. & S.) Murr. (Polyporus Schweinitzii Fries). The cause of by far the worst disease of balsam and of most other conifers of the Timagami Forest Reserve. Some stands are fully 75 per cent. buttrotted by this fungus.

Porodaedalea pini (Thore) Murr. (Trametes Pini Fries). A common and important cause of heart rot of many conifers; in Ontario it is occasionally the cause of heart rot of balsam.

Pucciniastrum pustulatum (Pers.) Diet. Common, and found both on the needles of the balsam and the leaves of its alternate host, the fireweed (Epilobium angustifolium).

Spongipellis borealis (Fries) Pat. (Polyporus borealis Fries). Cause of a heart rot, apparently not frequent.

Uredinopsis mirabilis (Peck) Magn. Common on the leaves of the balsam and its alternate host, the ferns (especially the beech fern, Phegopteris dryopteris).

Valsa Friesii (Duby) Fckl. Apparently the cause of cankered branches.

White Spruce (Picea canadensis (Mill.) BSP.)

Phaeolus sistotremoides (A. & S.) Murr. White spruce is fairly free from fungus diseases in the Timagami Forest Reserve. This and the one following are the two commonest causes of heart rot.

Porodaedalea pini (Thore) Murr.

Tyromyces guttulatus (Pk.) Murr. Infrequent on dead wood.

Black Spruce (Picea mariana (Mill.) BSP.)

Arceuthobium pusillum Peck. The dwarf mistletoe is not uncommon on black spruce throughout Ontario. In some cases entire swamps are badly diseased, the trees loaded with witches' brooms, due to the stimulation of this parasite.

Armillaria mellea Quel. Frequent on the roots. It is also reported here for the first time as the cause of a heart rot.

Coltricia tomentosa (Fr.) Murr. Occasional on roots.

Fomes roseus (A. & S.) Cooke. Occasional on dead wood: whether or not the cause of a heart rot remains undetermined.

Fomes ungulatus (Schaeff.) Sacc. Very abundant on dead wood. It has also been found causing heart rot.

Melampsoropsis abietina (A. & S.) Arth. This leaf rust and the following one are abundant, in some cases causing considerable defoliation. They are reported here on both hosts, namely, black spruce, and Labrador tea (Ledum groenlandicum).

Melampsoropsis cassandrae (Peck & Clint.) Arth. This rust, as in the case of the last, is reported here as wintering over in the alternate host. Found on both hosts in the Timagami Forest Reserve, namely, black spruce, and cassandra (Chamaedaphne calyculata).

Phaeolus sistotremoides (A. & S.) Murr. Common, and like the following, the cause of a destructive heart rot.

Porodaedalea pini (Thore) Murr.

Tyromyces anceps (Pk.) Murr. This fungus has been regarded as very rare in eastern America, but in our northern country it is found to be the frequent cause of decay in the fallen trunks of various conifers.

Banksian or Jack Pine (Pinus banksiana Lamb.)

Cronartium cerebrum (Pk.) Hedg. & Long. This stem rust occurs abundantly and often destructively on the jack pine. It is also found abundantly on the leaves of the red oak in the Timagami Forest Reserve, on which, however, it causes no appreciable injury.

Cronartium comptoniae Arth. This interesting stem rust of the jack pine was found on both of the alternate hosts, the sweet fern (Myrica asplenifolia) and sweet Gale (Myrica Gale). It is quite certain that it will be found on its coniferous hosts in the Timagami Forest Reserve, the locality referred to in this note.

Cronartium pyriforme (Pk.) Hedg. & Long. Found on its alternate host, the bastard toad-flax (Comandra umbellata), south of Parry Sound. It is to be expected that this stem rust will be found on the jack pine in Northern Ontario.

Lophodermium pinastri (Schw.) Chev. Frequent and causing more or less extensive leaf fall.

Phaeolus sistotremoides. This together with the following are the commonest cause of heart rot in this pine.

Porodaedalea pini.

Red Pine (Pinus resinosa Ait.)

Cronartium cerebrum (Peck) Hedg. & Long. A rare rust on red pine in the Timagami Forest Reserve.

Fomes roseus (A. & S.) Cooke. Fairly common on dead wood.

Phaeolus sistotremoides. This, together with the following are the commonest cause of heart rot in this pine.

Porodaedalea pini.

Tyromyces anceps (Peck) Murr. On dead wood.

Coleosporium solidaginis (Schw.) Thum. Abundant on asters as an alternate host. It is to be looked for on the needles of both the red and jack pine.

White Pine (Pinus strobus L.)

Cronartium ribicola Fischer. This destructive stem rust of white pine is widely distributed throughout southern Ontario on white pine and on various Ribes. It has not yet been found in Northern Ontario.

Lophodermium pinastri (Schr.) Chev. A cause of leaf fall, but apparently not serious.

Polyporus osseus Kalch. Infrequent, possibly the cause of a not hitherto reported heart rot.

Phaeolus sistotremoides. Very common, doing extensive damage to mature or nearly mature timber.

Porodaedalea pini. A serious heart rot, common in some localities. The white-spotted lumber made from diseased trunks is utilizable to a certain extent such as is not the case with the last.

Tyromyces anceps (Pk.) Murr. On fallen trunks.

White Cedar or Arbor Vitae (Thuja occidentalis L.)

Armillaria mellea (Vahl.) Quel. Apparently a common root-rot of cedars of all ages. Is also reported here for the first time as a cause of heart rot.

Coriolus balsameus (Pk.) Murr. Found by Mr. A. W. McCallum for the first time as a probable cause of a heart rot of cedar in the Timagami Forest Reserve.

Keithia thujina Durand. An extremely interesting leaf disease of cedar. This fungus has recently been reported as the cause of a highly destructive leaf blight of young western cedars on the Pacific coast. Little else except the original record of its occurrence in Wisconsin is known, so that the finding of it in the Timagami Forest Reserve is of special interest.

Pestalozzia spec. The cause of a leaf disease.

Phaeolus sistotremoides (A. & S.) Murr. Probably the cause of the commonest of the heart rots of the cedar in Northern Ontario.

Porodaedalea pini (Thore) Murr. Reported for the first time as the cause of a heart rot in arbor vitae.

I have the honour to be sir,

Your obedient servant,

E. J. Zavitz,

Provincial Forester.

Appendix No. 41.

Fuel Supply—Wood-Cutting Permits to Municipalities.

Attention was directed in the Annual Departmental Report for 1918, to the efforts of the Department toward relieving the fuel situation in various municipalities throughout the province. The Crown Timber Agents were instructed to select areas upon which wood was suitable chiefly for fuel purposes. They were instructed to co-operate in every way with the municipal authorities in locating such areas.

In cases where suitable areas were found to exist, and where municipalities applied to cut thereon, permits were issued for the cutting of fuel free of Crown dues.

Returns which have been received indicate that the following quantities of wood have been cut by the municipalities indicated:—

Municipality of Port Arthur	1,879	cords.
Town of Keewatin	326	"
Municipality of Bucke	200	"
Town of Kenora	1,115	"
City of Fort William	211¾	"
Municipality of North Bay	781½	"
City of Port Arthur	2,828	"
Total	7,341¼	"

In addition, mention might be made of the large quantities of fire-wood secured by operations in Algonquin Park.

John Houser,
Chief Clerk.

Albert Grigg,
Deputy Minister.

Appendix No. 42.

Honourable G. Howard Ferguson,
Minister of Lands, Forests and Mines,
Toronto, Ont.

Sir,—I have the honour to submit my report of the work performed by the Colonization Roads Branch of the Department of Lands and Forests for the fiscal year ending October 31st, 1919.

This report is in tabulated form and gives the details of each work with the expenditure made upon it, and a summary on the final page shows the total amounts of the various classes of work done.

Part of the work was done by direct expenditure of the Government, to the amount of $273,744.24. The balance was expended by Township Municipalities under Colonization Road By-laws, towards which the Government made grants amounting to $116,877.30, making a total of $390,621.54.

A great improvement could be made in the service by the employment of more technically trained men to educate and instruct the rural roadmaker, and to lay out and supervise his work. Many mistakes in road location and construction are due to lack of knowledge and errors of judgment of the local men upon whom we must depend to carry on road work.

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

C. H. Fullerton,

Superintendent of Colonization Roads.

Dated at Toronto, October 31st, 1919.

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL
ONTARIO,

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	NORTH DIVISION.								
1	Aberdeen, Leeburn, con. 3	120	35	160	18	gravel	70	5	.....
2	Aberdeen Additional, lot 3, con. 2	.....	....	.....	....	.....	.....	....	15
3	Aberdeen, McClure & Stewart's Hill	.....	....	.....	....	.....	.....	....	125
4	Aberdeen, Miller Valley road	.....	....	.....	....	.....	.....	....	.....
5	Aberdeen Additional, con. 1, lot 5	.....	....	.....	....	.....	.....	....	60
6	Ansonia to Nesterville	200	40	320	35	.....	.....	....	.....
7	Aubrey Township roads	195	45	195	20	gravel	160	5	370
8	Aubrey & Eaton Township roads	....	....	.....	....	.....	.....	....	65
9	Assiginack, Bidwell-Green Bay road	.....	....	.....	....	.....	.....	....	.....
10	Balfour, lots 6-5, con. 5	.....	....	.....	....	.....	.....	....	50
11	Balfour & Morgan, lot 2, con. 5	.....	....	.....	....	.....	.....	....	.....
12	Balfour Township road	.....	....	.....	....	.....	.....	....	.....
13	Blake & Pardee, lot 8, cons. 1-2	.....	....	.....	....	.....	.....	....	.....
14	Bright, con. 4	.....	....	.....	....	.....	.....	....	160
15	Bright and Gladstone Twp. road	.....	....	.....	....	.....	.....	....	.....
16	Bright, con. 5, lot 7	.....	....	.....	....	.....	.....	....	.....
17	Bouchard Road in Plummer Add'l	.....	....	.....	....	.....	.....	....	.....
18	Bridgland road	.....	....	.....	....	.....	.....	....	.....
19	Broder, Lambi road	.....	....	.....	....	.....	.....	....	160
20	Broder, lot 8-10, con. 2	160	66	.....	....	.....	.....	....	.....
21	Broder, 6 in 10, con. 4	160	50	160	15	.....	.....	....	320
22	Broder, Kelly Lake road	.....	....	.....	....	.....	.....	....	480
23	Broder, Long Lake road	.....	....	.....	....	.....	.....	....	.....
24	Broder, lot 6, con. 2	.....	....	.....	....	.....	.....	....	.....
25	Broder, Cæsar road	.....	....	.....	....	.....	.....	....	80
26	Capreol, Con. 2, lots 5-8	.....	....	.....	....	.....	.....	....	1,200
27	Capreol, Con. 4, in 5	.....	....	.....	....	.....	.....	....	190
28	Capreol, 5 in 8, con. 3	.....	....	.....	....	.....	.....	....	640
29	Cartier-Geneva road	.....	....	.....	....	.....	.....	....	.....
30	Chapleau Township road	.....	....	.....	....	.....	.....	....	1,600
31	Claughley road	.....	....	.....	....	.....	.....	....	20
32	Cobden road	.....	....	.....	....	.....	.....	....	.....
33	Copper Bay location	.....	....	.....	....	.....	.....	....	.....
34	Creighton, lots 7-8, con. 6	.....	....	.....	....	.....	.....	....	.....
35	Creighton and O'Donnell road	.....	....	.....	....	.....	.....	....	640
36	Creighton, lot 5, con. 5	320	25	.....	....	.....	.....	....	.....
37	Creighton, lots 2-3, cons. 5-6	.....	....	.....	....	.....	.....	....	80
38	Cuthbertson, north from C.P.R.	.....	....	.....	....	.....	.....	....	.....
39	Cuthbertson, con. 7, road	440	40	.....	....	.....	.....	....	.....
40	Day, Kirkwood road	.....	....	.....	....	.....	.....	....	.....
41	Day, con. 3, lot 4	160	40	90	20	.....	.....	....	.....
42	Dawson Road Township roads	960	20	160	10	earth	160	10	.....
43	Dill, McFarlane Lake road	.....	....	.....	....	.....	.....	....	480
44	Dill, Leedale road	80	60	.....	....	.....	.....	....	80
45	Dill, con. 5, lots 7-8	.....	....	.....	....	.....	.....	....	80
46	Dorion Township roads	40	24	40	20	earth	40	20	.....
47	Dowling and Fairbanks Twp. road	400	66	400	16	.....	.....	....	640
48	Dowling, lot 2, con. 2	.....	....	.....	....	.....	.....	....	.....
49	Dowling, Larchwood road	.....	....	.....	....	.....	.....	....	.....
50	Dowling, Bridge approach	.....	....	.....	....	.....	.....	....	20

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES, 1919.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD										
							Side-Brushed		Graded and Shaped		SURFACED						
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	MILEAGE	EXPENDITURE $ c.		NUMBER
...	...	.....	2	wood	.....	.....	.....	..	.....	..	.....	.....	..	.50	405	04	1
...	...	.....	3	wood	.....	.....	.....	..	75	24	gravel	75	5	.23	200	85	2
...	...	.....	2	wood	.....	.....	.....	..	240	22	gravel	125	5	.75	299	99	3
...	...	.....	...	.....	.....	.....	100	12	560	18	gravel	480	6	1.75	500	59	4
...	...	.....	...	.....	.....	.....	.....	..	160	20	gravel	120	5	.50	300	00	5
...	...	.....	1	wood	earth	100	.....	..	.....	..	.....	.....	..	1.00	499	99	6
2	20	wood	4	wood	.....	.....	.....	..	.....	..	.....	.....	..	1.50	344	25	7
...	...	.....	4	wood	cord'roy	220	85	45	60	14	gravel	70	6	2.00	641	50	8
...	...	.....	...	.....	.....	.....	.....	..	.....	..	gravel	280	6	.85	400	00	9
1	16	wood	1	wood	.....	.....	.....	..	80	12	.....	.....	..	.25	205	25	10
...	...	.....	...	.....	.....	.....	.....	..	660	10	.....	.....	..	2.00	500	00	11
...	...	.....	3	wood	.....	.....	.....	..	320	16	.....	.....	..	.25	114	00	12
...	...	.....	9	wood	.....	.....	160	20	240	18	gravel	240	6	.75	500	00	13
...	...	.....	4	wood	.....	.....	.....	..	480	18	gravel	80	5	1.50	352	13	14
...	...	.....	...	.....	.....	.....	.....	..	360	20	gravel	160	6	1.56	450	84	15
...	...	.....	4	wood	.....	.....	100	14	460	22	gravel	70	5	1.50	351	52	16
...	...	.....	2	wood	.....	.....	100	35	140	20	gravel	140	5	.50	199	99	17
...	...	.....	...	.....	earth	366	160	16	440	24	gravel	130	6	1.41	804	63	18
...	...	.....	3	wood	.....	.....	.....	..	320	16	.....	.....	..	1.00	200	00	19
...	...	.....	4	wood	.....	.....	.....	..	.....	..	.....	.....	..	.50	100	00	20
...	...	.....	5	wood	.....	.....	.....	..	.....	..	.....	.....	..	.50	200	50	21
...	...	.....	2	wood	.....	.....	.....	..	820	9	.....	.....	..	2.50	302	09	22
...	...	.....	...	.....	.....	.....	.....	..	540	16	.....	.....	..	1.50	150	00	23
...	...	.....	2	wood	.....	.....	.....	..	320	16	.....	.....	..	1.00	150	00	24
...	...	.....	6	wood	.....	.....	.....	..	720	16	.....	.....	..	2.00	199	87	25
...	...	.....	9	wood	.....	.....	.....	..	1,200	18	.....	.....	..	3.75	300	88	26
...	...	.....	...	.....	.....	.....	.....	..	160	12	.....	.....	..	.50	251	00	27
...	...	.....	2	wood	.....	.....	.....	..	320	15	.....	.....	..	1.00	150	50	28
...	...	.....	...	.....	.....	.....	.....	..	480	12	.....	.....	..	1.50	253	30	29
...	...	.....	5	wood	.....	.....	80	60	800	16	.....	.....	..	4.00	2,000	00	30
...	...	.....	...	.....	.....	.....	.....	..	960	22	gravel	90	5½	3.00	504	17	31
1	30	wood	...	.....	earth	10	.....	..	.....	..	.....	.....	..	0.00	359	16	32
...	...	.....	...	.....	earth	110	.....	..	.....	..	gravel	135	5	.50	250	00	33
1	16	wood	3	wood	.....	.....	.....	..	320	15	.....	.....	..	1.00	203	50	34
1	16	wood	...	.....	.....	.....	.....	..	320	11	.....	.....	..	1.00	738	55	35
...	...	.....	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	1.00	104	50	36
...	...	.....	8	wood	.....	.....	.....	..	400	17	.....	.....	..	1.25	290	25	37
...	...	.....	...	.....	.....	.....	.....	..	.....	..	gravel	190	6	.59	300	00	38
...	...	.....	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	1.38	699	75	39
...	...	.....	...	.....	.....	.....	.....	..	.....	..	gravel	170	5	.53	349	85	40
...	...	.....	5	wood	.....	.....	.....	..	100	20	.....	.....	..	.81	349	76	41
...	...	.....	17	wood	.....	.....	.....	..	.....	..	.....	.....	..	3.00	750	00	42
...	...	.....	2	wood	.....	.....	.....	..	.....	..	stone	240	5	.75	249	99	43
1	16	wood	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	.25	150	63	44
1	16	wood	3	wood	.....	.....	240	25	.....	..	.....	.....	..	.75	175	00	45
...	...	.....	5	wood	.....	.....	300	15	940	24	gravel	1,100	6	3.56	1,500	00	46
...	...	.....	5	wood	.....	.....	.....	..	.....	..	.....	.....	..	1.25	408	55	47
...	...	.....	1	wood	.....	.....	160	25	320	16	.....	.....	..	1.00	252	00	48
...	...	.....	...	.....	.....	.....	.....	..	320	12	.....	.....	..	1.00	100	78	49
...	...	.....	1	iron	.....	.....	.....	..	.....	..	.....	.....	..	.6	303	48	50

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	NORTH DIVISION.—*Continued.*								
51	Dryden, lot 11, con. 5	100	40	160	12	.....	.....	....	100
52	Dryden, lot 12, con. 6	.....	....	.....	....	.....	.....	....	160
53	Dryden, lots 10-11, con. 6	.....	....	.....	....	.....	.....	....	640
54	Falconbridge and Garson Twp. road	.....	....	.....	....	.....	.....	....	.....
55	Fenwick Township road	.....	....	.....	....	.....	.....	....	44
56	Galbraith, con. 2, lot 11	.....	....	.....	....	.....	.....	....	.....
57	Galbraith, con. 3, lot 11	.....	....	.....	....	.....	.....	....	40
58	Galbraith, cons. 2-3	109	40	109	24	.....	.....	....	109
59	Gillies Township roads	.....	....	.....	....	.....	.....	....	.....
60	Goldenberg road, east	.....	....	.....	....	.....	.....	....	60
61	Gorham Township roads	560	40	240	18	gravel	240	6	320
62	Gould, con. 2	400	40	.....	....	.....	.....	....	.....
63	Hagar, Appleby and Markstay road	.....	....	.....	....	.....	.....	....	.....
64	Hagar, lots 12-13, con. 1	.....	....	.....	....	.....	.....	....	320
65	Hagar, 1 and 6 in 4-5	.....	....	.....	....	.....	.....	....	480
66	Hagar-Awrey road	.....	....	.....	....	.....	.....	....	.....
67	Hagar, lots 13-14, cons. 1-2	.....	....	.....	....	.....	.....	....	240
68	Hagar, Loughrin road	.....	....	.....	....	.....	.....	....	180
69	Hagar, McGillis road	.....	....	.....	....	.....	.....	....	.....
70	Hagar, lots 8-9, con. 5	.....	....	.....	....	.....	.....	....	160
71	Hagar, lots 10-11, con. 5	.....	....	.....	....	.....	.....	....	100
72	Hagar, lots 13-14, cons. 2-3	.....	....	.....	....	.....	.....	....	160
73	Hagar, lots 11-12, cons. 1-2	320	35	.....	....	.....	.....	....	.....
74	Hagar-Awrey road	80	50	160	16	.....	.....	....	.....
75	Hagar, Nepowassan road	.....	....	.....	....	.....	.....	....	320
76	Hagar, North Finlans Corners	.....	....	.....	....	.....	.....	....	.....
77	Hallam, con. 1, lots 7-8	160	40	.....	....	.....	.....	....	.....
78	Hallam, con. 1, lots 4-6	.....	....	.....	....	.....	.....	....	.....
79	Hallam, Mackay & Lee Valley road	.....	....	.....	....	.....	.....	....	20
80	Hallam, Lee Valley road	300	601	120	18	.....	.....	....	.....
81	Hallam, con. 5	.....	....	.....	....	.....	.....	....	.....
82	Hallam, Birch Lake road	.....	....	.....	....	.....	.....	....	40
83	Hanmer, lots 7-8, con. 5	80	25	114	10	.....	.....	....	.....
84	Hilton, Canoe Point road	320	30	.....	....	.....	.....	....	.....
85	Ignace Township roads	.....	....	.....	....	.....	.....	....	.....
86	Iron Bridge and Bellingham road	.....	....	.....	....	.....	.....	....	.....
87	Jocelyn, P. line road	.....	....	.....	....	.....	.....	....	.....
88	Johnson, from Rathwell's corner	70	45	.....	....	.....	.....	....	.....
89	Johnson, Desbarats south road	.....	....	.....	....	.....	.....	....	100
90	Kirkwood, con. 3, lot 4	.....	....	.....	....	.....	.....	....	.....
91	Korah Township roads (hill)	.....	....	.....	....	.....	.....	....	.....
92	Laird-McDonald C.P.R. crossing	.....	....	.....	....	.....	.....	....	.....
93	Laird, secs. 20-29	160	40	.....	....	gravel	100	5	.....
94	Laird, bet. P.O. and Government road	.....	....	.....	....	.....	.....	....	.....
95	Laird, secs. 8-9, and 16-17	200	30	.....	....	.....	.....	....	.....
96	Laird, secs. 3-10	.....	....	.....	....	.....	.....	....	.....
97	Lefroy, Main road, lot 15	.....	....	.....	....	.....	.....	....	.....
98	Lefroy, Hopper Main road	.....	....	.....	....	.....	.....	....	.....
99	Lumsden, con. 2	80	15	80	15	.....	.....	....	.....
100	Lumsden, lot 1, con. 4	.....	....	.....	....	.....	.....	....	.....

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES,
9.—*Continued.*

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD							MILEAGE	EXPENDITURE	NUMBER
							Side-Brushed		Graded and Shaped		SURFACED					
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		$ c.	
...	...	.....	8	wood	.....	.....	...	....	.....	..	.....	.....	..	1.00	259 00	51
2	16	wood	1	wood	.....	.....	...	....	10	12	.....	.....	..	.25	199 70	52
...	...	.....	...	.....	.....	.....	...	....	480	10	.....	.....	..	1.50	152 62	53
...	...	.....	2	wood	earth	480	...	....	80	16	.....	.....	..	.25	198 76	54
1	...	cedar	...	.....	rock	176	...	....	44	8	gravel	59	6	.50	449 50	55
...	...	.....	...	.....	earth	500	...	....	.....	..	gravel	40	5	.12	200 00	56
...	...	.....	...	.....	earth	30	...	....	80	20	gravel	80	6	.31	300 00	57
...	...	.....	2	wood	.....	.....	...	....	.....	..	.....	.....	..	.34	301 00	58
...	...	.....	7	wood	earth	78	400	10	480	18	gravel	680	6	2.12	1,000 00	59
...	...	.....	3	cedar	.....	.....	800	12	320	18	gravel	155	5	2.50	600 00	60
2	16	wood	30	wood	cor'ry	55	...	....	1,120	24	gravel	3,040	6	10.25	2,500 00	61
...	...	.....	2	wood	.....	.....	...	....	.....	..	.....	.....	..	1.25	505 25	62
...	...	.....	2	wood	.....	.....	...	....	160	12	.....	.....	..	.50	155 17	63
...	...	.....	...	.....	.....	.....	...	....	160	14	.....	.....	..	.50	102 25	64
1	16	wood	...	.....	.....	.....	...	....	480	15	.....	.....	..	1.50	200 50	65
...	...	.....	...	.....	.....	.....	...	....	160	12	.....	.....	..	.50	250 00	66
...	...	.....	4	wood	.....	.....	...	....	320	12	.....	.....	..	1.00	102 00	67
...	...	.....	3	wood	.....	.....	150	10	180	15	.....	.....	..	.50	111 00	68
...	...	.....	5	wood	.....	.....	...	....	320	16	.....	.....	..	1.00	200 00	69
...	...	.....	4	wood	.....	.....	...	....	240	18	.....	.....	..	.75	99.91	70
...	...	.....	...	.....	.....	.....	...	....	160	15	.....	.....	..	.50	150 00	71
...	...	.....	2	wood	.....	.....	...	....	80	9	.....	.....	..	.25	101 00	72
...	...	.....	...	.....	.....	.....	...	....	.....	..	.....	.....	.	1.00	100 00	73
...	...	.....	2	wood	.....	.....	80	50	.....	..	.....	.....	..	.75	200 53	74
...	...	.....	4	wood	.....	.....	...	....	160	9	.....	.....	..	.50	90 00	75
...	...	.....	...	.....	.....	.....	...	....	160	16	.....	.....	..	.50	200 00	76
...	...	.....	...	.....	.....	.....	...	....	160	24	.....	.....	..	1.00	300 00	77
...	...	.....	...	.....	.....	.....	...	....	90	20	gravel	82	5	.28	239 72	78
...	...	.....	2	wood	earth	800	...	....	160	24	.....	.....	..	.75	300 00	79
...	...	.....	2	pipe	.....	.....	...	....	.....	..	.....	.....	..	.94	989 90	80
...	...	.....	2	wood	.....	.....	160	12	640	16	gravel	10	6	2.00	302 25	81
...	...	.....	3	wood	.....	.....	...	....	620	18	gravel	160	6	2.00	799 45	82
...	...	.....	...	.....	.....	.....	...	....	.....	..	.....	.....	..	.35	150 50	83
...	...	.....	1	wood	.....	.....	...	....	.....	..	.....	.....	..	1.00	252 50	84
...	...	.....	2	wood	cor'ry	500	300	45	.....	..	gravel	600	9	3.00	442 74	85
...	...	.....	2	wood	earth	130	...	....	320	20	gravel	480	7	2.00	708 34	86
...	...	.....	...	.....	earth	150	...	....	.....	..	gravel	80	5½	.25	250 00	87
...	...	.....	...	.....	earth	150	70	24	.....	..	gravel	110	5½	.65	400 00	88
...	...	.....	...	.....	.....	.....	...	....	.....	..	gravel	200	5	.62	300 00	89
...	...	.....	...	.....	.....	.....	310	20	610	20	.....	.....	..	1.88	300 00	90
...	...	.....	3	cedar	earth	4,100	...	....	.....	..	.....	.....	..	.12	2,175 00	91
...	...	.....	...	.....	earth	55	...	....	8	20	gravel	75	5	.22	200 00	92
...	...	.....	1	wood	earth	200	...	....	.....	..	.....	.....	..	.50	400 00	93
...	...	.....	...	.....	.....	.....	...	....	.....	..	gravel	150	5	.47	400 00	94
...	...	.....	...	.....	earth	200	...	....	60	18	gravel	30	6	.94	300 00	95
...	...	.....	...	.....	.....	.....	...	....	.....	..	gravel	110	5	.34	275 00	96
...	...	.....	...	.....	.....	.....	...	....	120	22	gravel	175	6	.54	297 81	97
...	...	.....	...	.....	.....	.....	...	....	.....	..	gravel	100	5½	.31	300 00	98
...	...	.....	...	.....	cor'ry	440	...	....	.....	..	.....	.....	..	.25	101 50	99
...	...	.....	...	.....	.....	.....	...	....	480	9	.....	.....	..	1.50	151 08	100

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	NORTH DIVISION.—*Continued.*								
101	Lybster Township roads	.....	....	.....	....	.....	.....	....	268
102	Marks Township roads	280	25	80	18	gravel	80	6	85
103	May, from Main road south	.....	....	.....	....	.....	.....	....	.....
104	May, Massey-Lee Valley, lot 7	.....	....	.....	....	.....	.....	....	.....
105	May, Spanish River bridge, con. 1	.....	....	.....	....	.....	.....	....	.....
106	May, lots 9-10, con. 1	.....	....	.....	....	.....	.....	....	.....
107	May, cons. 3-4, lots 9-10	.....	....	.....	....	.....	.....	....	160
108	May, Massey-Birch Lake, con. 3	.....	....	.....	....	.....	.....	....	.....
109	McDonald, sec. 20-21	.....	....	.....	....	.....	.....	....	.....
110	McDonald, from sec. 16	.....	....	.....	....	.....	.....	....	100
111	McDonald, sec. 1 on T. L.	320	40	.....	....	.....	.....	....	.....
112	McDonald, sec. 26-27	.....	....	.....	....	.....	.....	....	.....
113	McDonald, Saunder's Hill, sec. 16	80	40	87	24	gravel	30	5	.....
114	McKim Township road, con. 5	.....	....	.....	....	.....	.....	....	.....
115	McKim, Sudbury-Copper Cliff road	.....	....	.....	....	.....	.....	....	.....
116	McKinnon, con. 5, lot 9	206	35	32	18	.....	.....	....	.....
117	Mellick Township road	.....	....	.....	....	.....	.....	....	66
118	Meredith, secs. 29-30	.....	....	.....	....	.....	.....	....	.....
119	Meredith, sec. 28, Sault road	.....	....	.....	....	.....	.....	....	.....
120	Michipicoten Township roads	.....	....	.....	....	.....	.....	....	10
121	Morgan, con. 1, lots 5-6	.....	....	.....	....	.....	.....	....	160
122	Morgan, lots 10-11, con. 1	no w	ork.	.....	....	.....	.....	....	.....
123	Nairn to Spanish River road	.....	....	.....	....	.....	.....	....	28
124	Nipigon Township roads	320	40	.....	....	gravel	320	7	.....
125	Oliver Township roads	.....	....	.....	....	.....	.....	....	.....
126	Patton, con. 3, to Trunk road	.....	....	.....	....	.....	.....	....	70
127	Patton and Gladstone T. L. road	.....	....	.....	....	.....	.....	....	160
128	Patton and Gladstone from McLaughlins	.....	....	.....	....	.....	.....	....	.....
129	Pearson Township road	1,280	40	40	24	gravel	40	7	.....
130	Plummet, Northern road	30	50	80	21	gravel	30	6	8
131	Plummer, con. 6, lot 12	.....	....	.....	....	.....	.....	....	160
132	Plummer, from Gilroy's hill	.....	....	.....	....	.....	.....	....	9
133	Plummer Additional road	.....	....	.....	....	.....	.....	....	.....
134	Plummer, from con. 3, lot 2	.....	....	.....	....	.....	.....	....	.....
135	Plummer, con. 3	.....	....	.....	....	.....	.....	....	.....
136	Plummer Additional, from con. 3	.....	....	.....	....	.....	.....	....	.....
137	Point Aux Pins road	.....	....	.....	....	.....	.....	....	.....
138	Pellatt Township roads	480	40	.....	....	.....	.....	....	125
139	Rose, Maguire road	.....	....	.....	....	.....	.....	....	25
140	Salter, from lot 20	320	40	160	20	.....	.....	....	.....
141	Scoble Township road, west	.....	....	.....	....	.....	.....	....	.....
142	Scoble Township road, east	120	40	40	18	gravel	40	5	.....
143	Shakespeare, Centre line road	.....	....	.....	....	.....	.....	....	.....
144	Shedden, Spanish and Walford road	.....	....	.....	....	.....	.....	....	.....
145	Shedden, south from Spanish	.....	....	.....	....	.....	.....	....	.....
146	Stirling Township roads	105	40	105	24	earth	105	5	310
147	St. Joseph, F. & G. line	.....	....	.....	....	.....	.....	....	.....
148	St. Joseph, B. line	.....	....	.....	....	.....	.....	....	.....
149	Strange Township roads	.....	....	.....	....	.....	.....	....	140
150	Striker, Jensen road	.....	....	.....	....	.....	.....	....	.....

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES, 9.—*Continued.*

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD							MILEAGE	EXPENDITURE	NUMBER
							Side-Brushed		Graded and Shaped		SURFACED					
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		$ c.	
1	r.	plank	10	wood	.....	.....	120	10	1,560	18	gravel	1,600	6	5.00	999 45	101
...	...	.....	8	wood	earth	310	300	24	760	18	gravel	780	6	3.25	999 96	102
...	...	.....	2	wood	.....	.....	70	12	307	18	.....	.....	..	1.00	252 00	103
...	..	.....	...	.....	.....	.....	.....	..	10	20	gravel	167	5½	.52	302 00	104
...	...	.....	...	.....	.....	.....	.....	..	.....	..	gravel	204	5	.75	350 00	105
...	...	.....	...	.....	earth	55	.....	..	.....	..	gravel	290	5	1.00	301 06	106
...	...	.....	2	wood	.....	.....	.....	..	160	17	gravel	160	5	1.00	404 05	107
...	..	.....	...	.....	earth	175	.....	..	140	20	gravel	140	5	.50	300 00	108
...	...	.....	1	wood	.....	.....	.....	..	.....	..	gravel	72	5	.22	200 00	109
...	...	.....	1	wood	.....	.....	.....	..	.....	..	gravel	100	5½	.50	299 95	110
...	...	.....	3	wood	earth	500	.....	..	.....	..	.....	.....	..	1.00	399.91	111
...	...	.....	...	.....	.....	.....	.....	..	.....	..	gravel	160	5½	.50	397 65	112
...	...	.....	1	wood	earth	1,600	.....	..	.....	..	.....	.....	..	.28	400 00	113
...	...	.....	...	.....	.....	.....	.....	..	640	20	.....	.....	..	2.00	200 00	114
...	...	.....	...	.....	stone	660	.....	..	.....	..	.....	.....	..	.11	1,343 20	115
...	...	.....	3	wood	.....	.....	.....	..	.....	..	.....	.....	..	.64	399 40	116
...	...	.....	3	stone	earth	32	.....	..	45	18	gravel	45	5	.32	590 59	117
...	...	.....	...	.....	earth	80	.....	..	480	22	gravel	110	5	1.50	301 00	118
...	...	.....	1	wood	.....	.....	.....	..	160	24	gravel	120	5	.50	202 25	119
28	16	wood	19	wood	earth	79	2,201	6	17	12	gravel	284	6	7.00	2,175 00	120
1	r.	wood	1	wood	cord'y	175	160	40	240	16	.....	.....	..	1.00	200 50	121
...	...	.....	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	.....	175 00	122
...	...	.....	4	cedar	.....	.....	300	10	408	18	gravel	148	7	1.27	978 11	123
...	...	.....	4	wood	.....	.....	1,120	15	.....	..	gravel	967	5	5.00	1,001 20	124
...	...	.....	2	wood	.....	.....	320	10	160	21	gravel	320	6	1.00	499 99	125
...	..	.....	...	.....	earth	100	100	14	240	22	gravel	60	5	1.50	486 16	126
...	...	.....	...	.....	.....	.....	160	40	160	20	gravel	160	5½	.50	349 12	127
...	...	.....	...	.....	.....	.....	.....	..	70	24	gravel	257	5½	1.00	451 35	128
...	...	.....	17	wood	earth	20	.....	..	720	20	gravel	720	5	6.25	999 25	129
...	...	.....	...	.....	earth	200	.....	..	.....	..	.....	.....	..	.34	350 00	130
...	...	.....	2	wood	.....	.....	240	20	100	24	gravel	100	5	.75	301 25	131
...	...	.....	1	wood	.....	.....	.....	..	15	22	gravel	108	5	.41	248 00	132
...	...	.....	...	.....	.....	.....	.....	..	.....	..	gravel	110	5	.34	300 00	133
...	...	.....	...	.....	earth	20	2	..	240	22	gravel	240	5	.25	365 75	134
...	...	.....	1	wood	.....	.....	.....	..	60	18	gravel	180	5	.75	248 70	135
...	...	.....	...	.....	.....	.....	400	40	.....	..	.....	.....	..	1.25	345 37	136
...	...	.....	...	.....	.....	.....	.....	..	720	18	gravel	1,329	6	4.75	3,775 86	137
2	18	wood	4	wood	stone	187	480	20	1,780	15	gravel	1,368	10	10.00	1,395 36	138
...	...	.....	...	.....	.....	.....	.....	..	480	22	gravel	160	5	1.50	299 90	139
...	...	.....	4	wood	earth	50	.....	..	.....	..	.....	.....	..	1.00	300 00	140
...	...	.....	12	wood	.....	.....	800	10	800	18	earth	800	6	4.00	505 55	141
...	...	.....	3	wood	.....	.....	140	20	160	18	gravel	160	6	.88	500 00	142
...	...	.....	2	wood	earth	1,200	.....	..	240	20	gravel	80	5	1.00	375 00	143
...	...	.....	2	wood	.....	.....	.....	..	80	18	gravel	90	6	.28	199 95	144
...	...	.....	...	.....	.....	.....	.....	..	160	18	gravel	140	5	.50	202 25	145
...	...	.....	2	wood	.....	.....	106	40	106	24	gravel	106	5	.65	649 70	146
...	...	.....	1	wood	earth	170	.....	..	.....	..	gravel	90	5	.28	199 52	147
...	...	.....	2	wood	.....	.....	40	30	120	30	gravel	50	5	.75	201 50	148
1	re	paired	17	wood	earth	362	.....	..	400	24	gravel	400	5	2.00	749 99	149
...	...	.....	6	wood	.....	.....	320	25	320	18	gravel	90	5	2.00	558 15	150

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	NORTH DIVISION.—*Continued.*								
151	Striker, Dazzy bridge, con. 1	.....	....	.....	....	.....	.....	....	.....
152	Striker, con. 2	90	40	90	18	gravel	90	....	.....
153	Striker, Ritchie's hill	.....	....	.....	....	.....	.....	....	70
154	Tarbutt, cons. 2-3	100	40	.....	....	.....	.....	....	110
155	Tarbutt, con. 5	160	30	480	24	gravel	35	6	.....
156	Tarbutt, Maclennan & Pt. Finlay road	.....	....	.....	....	.....	.....	....	.....
157	Tarbutt, Maclennan & Pt. Finlay road	.....	....	.....	....	.....	.....	....	160
158	Tarbutt & Laird T. L.	.....	....	.....	....	.....	.....	....	.....
159	Tarentorous, Heyden road	290	40	290	10	gravel	40	6	.....
160	Thessalon, along Lake Sore	640	40	.....	....	.....	.....	....	.....
161	Thompson, Draper road	.....	....	.....	....	.....	.....	....	7
162	Van Horne Township roads	320	40	320	20	gravel	25	6	1,700
163	Vankoughnet Township roads	365	36	336	20	gravel	11	6	.....
164	Victoria, Brown Lake to Cedar Lake	.....	....	.....	....	.....	.....	....	60
165	Victoria, secs. 23-21	.....	....	.....	....	.....	.....	....	.....
166	Ware Township roads, east	320	40	.....	....	.....	.....	....	.....
167	Ware Township road, west	640	40	40	16	.....	.....	....	640
168	Mond and Fairbank Lake road	.....	....	.....	....	.....	.....	....	320
	Total	12,669	....	5,751	....	.....	1,616	....	15,779

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES, 9.—*Concluded.*

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD							MILEAGE	EXPENDITURE	NUMBER
							Side-Brushed		Graded and Shaped		SURFACED					
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		$. c.	
...	...	.....	...	.....	.....	.....	160	14	120	20	gravel	160	5½	1.00	399 00	151
...	...	.....	...	.....	earth	400	.....	..	.....	..	.....	.....	..	.31	349 44	152
...	...	.....	...	.....	earth	838	.....	..	40	24	gravel	40	6	.25	358 93	153
...	...	.....	...	.....	.....	.....	.....	..	85	20	.....	.....	..	.57	304 70	154
...	...	.....	1	wood	earth	300	.....	..	.....	..	.....	.....	..	1.50	312 15	155
...	...	.....	...	.....	.....	.....	.....	..	.....	..	gravel	240	5	.75	274 55	156
...	...	.....	...	.....	.....	.....	.....	..	.....	..	gravel	190	5½	.59	514 59	157
...	...	.....	...	.....	earth	90	.....	..	77	24	gravel	147	7	.50	299 98	158
...	...	.....	3	cedar	rock	333	.....	..	.....	..	.....	.....	..	.91	829 36	159
1	12	cedar	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	2.00	310 49	160
...	...	.....	...	.....	earth	729	40	12	55	22	gravel	150	6	.75	697 67	161
1	15	wood	7	wood	earth	862	55	40	560	20	gravel	440	6	4.25	1,482 90	162
1	16	wood	15	wood	earth	973	40	20	.....	..	gravel	40	7	2.00	1,500 00	163
...	...	.....	...	.....	.....	.....	.....	..	320	18	gravel	80	5	1.00	400 62	164
...	...	.....	2	wood	.....	.....	.....	..	320	20	gravel	200	5½	1.00	400 50	165
...	...	.....	4	wood	stone	500	.....	..	.....	..	gravel	640	6	3.00	1,550 00	166
1	16	wood	7	wood	earth	75	.....	..	.....	..	gravel	640	7	4.00	1,555 83	167
...	...	.....	...	.....	.....	.....	.....	..	160	16	.....	.....	..	1.00	297 58	168
51	...	.....	409	.....	.....	20,113	11337	..	35,962	..	.....	25,772	..	216.95	78300 85	

SCHEDULE SHOWING THE AMOUNT OF ROAD CONSTRUCTION,

Number	Township	Cleared and Stumped		Graded		Surfaced		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet
	North Division.							
1	Alberton, By-law No. "H"	100	66	404	28	gravel	715	5
2	Assiginack By-law No. 414			28	24	gravel	1,677	5
3	Atwood By-law No. 102	290	28	567	24			
4	Balfour By-law No. 59			2,240	16			
5	Blezard By-law No. 105			2,880	24			
6	Blue By-law No. 43	208	28	242	28	gravel	100	5
7	Billings By-law No. 247			120	20	gravel	113	7
8	Burpee By-law No. 90			668	18	gravel	177	5
9	Carnarvon By-law No. 323			400	18	gravel	260	7
10	Chapple By-law No. 247	250	66	725	26	gravel	2,351	5
11	Conmee By-law No. 40	920	30	860	20	gravel	860	8
12	Dilke By-law No. 88			540	28	gravel	193	5
13	Drury, Denison & Graham, By-law No. 180	960	25	8,640	12			
14	Emo By-law No. 230	690	20	567	24	gravel	2,421	5
15	Gordon By-law No. 157			2,130	12	gravel	934	6
16	Hilton By-law No. 399	160	14	593	22	gravel	716	7
17	Howland By-law No. 148			24	20	gravel	381	6
18	Jaffray & Mellick By-law No. 99	2,136	30	5,071	18	gravel	4,056	8
19	Jocelyn By-law No. 297	60	20			gravel	395	5
20	Johnson By-law No. 95	167	14	227	20	gravel	69	6
21	Korah By-law No. 179	365	66	4,427	24	gravel	3,370	7
22	Laird By-law No. 126			310	24	gravel	537	6
23	Lavalle By-law No. 192	731	66	420	24	gravel	1,602	6
24	McDonald, Meredith and Aberdeen Additional By-law No. 143			1,060	20	gravel	780	7
25	McIrvine By-law No. 220					gravel	360	5
26	Morley and Patullo By-law No. 183	111	33	653	28	gravel	1,272	5
27	Neebing By-law No. 377	840	40	1,000	20	gravel	400	5
28	O'Connor By-law No. 158	800	40	1,320	18	earth	1,480	18
29	Oliver By-law No. 183	1,440	10	1,440	18	gravel	2,240	7
30	Paipoonge By-law No. 164	80	66	2,060	18	gravel	2,700	7
31	Plummer Additional By-law No. 163			3,020	12	gravel	871	6
32	Prince By-law No. 74	320	10	450	24	gravel	200	6
33	Rayside By-law No. 216	320	60	1,120	18			
34	Sanfield By-law No. 241			12	18	gravel	263	7
35	Shuniah By-law No. 448			4,300	18	gravel	5,240	8
36	St. Joseph By-law No. 433			210	18	gravel	889	6
37	Tarentorus By-law No. 188	200	20	56	33	gravel	1,253	9
38	Thessalon By-law No. 12			580	20	gravel	480	5
39	Thompson By-law No. 114			100	20	gravel	70	5
40	Worthington By-law No. 91	260	20	320	28	gravel	210	5
	Total	11,308		49,784			39,635	

COLONIZATION ROADS BRANCH, UNDER MUNICIPAL BY-LAWS, 1919.

Ditched	Cut or Fill		Bridges			Culverts		New Road Mileage	Old Road Mileage	Government Expenditure	Number
Length, rods	Material	Amount in cu. yds.	Number	Span, feet	Material	Number	Material			$ c.	
46	clay	300				4	cedar	.31	3.25	899 85	1
40	clay	120				2	cedar		6.00	1,000 00	2
	clay	50				1	cedar	1.50	.50	573 77	3
2,889						8	wood		9.00	1,500 00	4
4,320						19	wood		9.00	500 00	5
30								1.25	.31	625 00	6
	earth	76	1R	18	wood.	4	rock		1.00	350 00	7
	stone	260							3.00	175 00	8
						7	cedar		2.00	450 00	9
160	earth	130	4	16	wood.	17	cedar	1.25	9.00	4,500 00	10
498	earth	600				23	wood	3.00	1.00	1,000 00	11
	earth	300				5	cedar	2.00	2.00	500 00	12
1,920						9	wood	3.00	24.00	2,500 00	13
70	earth	300				7	cedar	.75	8.50	2,919 56	14
	stone	70				11	cedar		11.00	825 00	15
									2.50	600 00	16
110	earth	466	1	16	wood.	8	cedar		1.50	675 00	17
4,115			7	18	wood.	38	wood	.50	21.00	1,623 02	18
620	earth	230				2	wood		1.50	600 00	19
119	rock	70							1.00	300 00	20
809	earth	2,386				9	wood	1.00	25.00	3,613 52	21
	earth	40							2.00	400 00	22
25	earth	50				2	wood	2.50	6.00	1,996 99	23
272	earth	300							4.00	600 00	24
									1.15	500 00	25
228	earth,	890				7	metal		5.00	1,991 37	26
1,200	earth	300	1	14	wood.	10	wood	2.25	3.00	3,163 97	27
			2	18	wood.	11	wood	1.50	4.12	1,000 00	28
240			1	16	wood.	20	wood		9.50	1,600 00	29
1,280	earth	200				15	wood	.25	9.00	3,064 97	30
						6	wood		11.75	775 00	31
100	earth	50				11	wood		6.50	300 00	32
880						5	wood		3.50	600 00	33
18						5	wood		.90	200 00	34
720	earth	100	6	18	wood.	30	wood		27.00	3,750 00	35
37						5	wood		3.00	1,200 00	36
800	earth	644				42	metal		11.00	2,500 00	37
									2.00	300 00	38
	earth	125							.40	150 00	39
8						1	cedar		1.25	575 00	40
21,575		8,057	23			344		19.06	253.13	50,397 02	

SCHEDULE SHOWING THE AMOUNT OF ROAD CONSTRUCTION UNDER THE MINES ONT

Number	Name and Location of Work	New Road							Ditched
		Cleared and Stumped		Graded and Shaped		Surfaced			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	West Division.								
1	Albemarle, 20th sideroad								
2	Albemarle, west road								
3	Amabel, lot 20, con. 4								
4	Armour, lot 24, con. 14								
5	Armour, lot 5, con. 5								240
6	Baysville and Bracebridge main road	280	66	280	18	gravel	280	8	1,360
7	Bethune, con. 6, lot 8-15	320	20	160	18				3
8	Bethune, lots 7-10, con. 8								
9	Brunel, Huntsville-Baysville road								
10	Cardwell, 25th sideroad								
11	Carling, con. 9, N.W. road	640	36						
12	Carling, 10th con. to Snug Harbour								
13	Carling, Nobel road, lots 7-16	160	25	50	16	gravel	50	5	
14	Chaffey, east road to Huntsville	160	30	160	16	gravel	160	6	
15	Chaffey, Huntsville-Ravinscliffe								
16	Chapman and Lount T. L. road			160	14	gravel	160	7	
17	Chapman, Bullocks Hill road								
18	Chapman, 10th sideroad	80	40	80	18	gravel	80	6	
19	Christie Township roads								
20	Draper, new road from Oakley								
21	Draper-Muskoka townline								
22	Eastnor, 15th sideroad, cons. 1-2								
23	Eastnor, cons. 2-3, lot 11								
24	Gurd and Patterson road								
25	Ferguson, McKellar Village road								
26	Foley, Blackstone road								
27	Foley, Christie road from P.S. road								
28	Foley, Christie road								
29	Franklin, Big Peninsula road								
30	Franklin and Sinclair, Bobcaygeon								
31	Freeman, Footes Bay to Mactier	160	30	160	18	earth	160	14	
32	Hagerman, Nipissing-Dunchurch road								
33	Himsworth, N., con. 24								
34	Himsworth, N., 20th sideroad	240	40	160	16	gravel	160	2	
35	Himsworth, N., con. 22	160	20	160	20	gravel	160	6	
36	Himsworth, S., 5th sideroad								
37	Himsworth, S., con. 4, lots 8-9								
38	Humphrey, Parry Sound road								
39	Humphrey, Peninsula road								
40	Lindsay, Bury road								
41	Lindsay, cons. 2-3, from S. Bd.								
42	Lount, Distress River road								
43	Machar, 20th sideroad								
44	Machar, lots 8-20, cons. 8-9								
45	Machar, North road to Gurd, con. 10								
46	Machar and Gurd, lots 25-26								
47	Machar and Strong, T. L.								
48	Matchedash, Station road, con. 2								
49	Matchedash sideroad, cons. 1-2								
50	McDougall, N.W. road	320	40	320	20				

COLONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND ARIO, 1919.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD							MILEAGE	EXPENDITURE	NUMBER
							Side brushed		Graded and Shaped		SURFACED					
Number	Span	Material	Number	Material	Material	Cubic Yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet			
..	..	.....	....	.....	.....	.....	100	12	140	16	.....	.....	..	.44	$100 00	1
..	..	.....	....	.....	.....	.....	.....	..	.....	..	gravel	125	7	.39	150 00	2
1	16	wood	....	.....	.....	.....	.....	..	.....	..	gravel	101	7	.31	250 00	3
..	..	.....	2	concrete	.....	.....	.....	..	160	14	gravel	160	6	.50	300 52	4
..	..	.....	3	concrete	.....	.....	.....	..	240	16	gravel	240	6	.75	300 00	5
..	..	.....	18	stone	rock	8,420	320	10	1,280	16	gravel	1,500	8	5.28	12656 31	6
1	12	cedar	....	.....	.....	.....	.....	..	.....	..	.....	.....	..	1.00	300 00	7
..	..	.....	6	cedar	.....	.....	.....	..	240	12	gravel	240	12	.75	319 55	8
..	..	.....	4	wood	.....	.....	640	50	350	18	gravel	95	5	2.50	400 00	9
1	12	wood	....	.....	.....	.....	180	40	180	18	.....	.....	..	.50	250 00	10
..	..	.....	4	cedar	.....	.....	.....	..	.....	..	.....	.....	..	2.00	302 73	11
..	..	.....	3	cedar	.....	.....	.....	..	.....	..	.....	.....	..	.50	257 86	12
..	..	.....	4	cedar	.....	.....	.....	..	.....	..	.....	.....	..	.50	299 99	13
..	..	.....	....	.....	.....	.....	.....	..	210	18	gravel	200	5	.75	403 80	14
..	..	.....	1	stone	earth	100	.....	..	400	18	gravel	200	5	1.25	400 00	15
..	..	.....	3	cedar	.....	.....	.....	..	.....	..	.....	.....	..	.50	249 31	16
..	..	.....	2	cedar	.....	.....	.....	..	160	16	gravel	169	6	.50	200 50	17
..	..	.....	2	cedar	.....	.....	.....	..	.....	..	.....	.....	..	.25	300 00	18
..	..	.....	3	cedar	.....	.....	.....	..	240	16	gravel	240	8	.75	350 64	19
3	16	wood	....	.....	.....	.....	.....	..	320	18	gravel	100	5	1.25	200 00	20
..	..	.....	1	stone	rock	20	.....	..	60	20	gravel	60	6	.25	300 00	21
..	..	.....	....	.....	.....	.....	.....	..	.....	..	gravel	80	8	.25	100 00	22
..	..	.....	....	.....	.....	.....	.....	..	15	20	gravel	85	8	.31	150 00	23
..	..	.....	4	cedar	.....	.....	.....	..	160	16	gravel	160	6	.50	251 12	24
..	..	.....	7	cedar	.....	.....	.....	..	800	7	gravel	800	7	2.25	980 81	25
..	..	.....	3	cedar	.....	.....	.....	..	320	17	gravel	320	7	1.00	280 10	26
..	..	.....	....	.....	.....	.....	.....	..	320	10	gravel	320	4	1.00	301 45	27
1	14	cedar	3	cedar	.....	.....	.....	..	170	14	gravel	170	7	.53	299 50	28
..	..	.....	....	.....	earth	560	.....	..	80	20	.....	.....	..	.25	275 00	29
..	..	.....	1	wood	earth	300	.....	..	320	20	gravel	340	5	1.25	300 00	30
..	..	.....	....	.....	.....	.....	.....	..	.....	..	.....	.....	..	.50	314 75	31
..	..	.....	4	wood	.....	.....	.....	..	160	16	gravel	160	4	.50	299 99	32
..	..	.....	6	cedar	.....	.....	.....	..	320	16	gravel	320	6	1.00	400.00	33
..	..	.....	2	wood	.....	.....	.....	..	.....	..	.....	.....	..	.75	300 00	34
..	..	.....	5	wood	.....	.....	.....	..	.....	..	.....	.....	..	.50	400 00	35
..	..	.....	....	.....	.....	.....	.....	..	320	16	gravel	320	8	1.00	300 00	36
..	..	.....	3	cedar	.....	.....	190	35	190	18	gravel	160	8	.59	300 00	37
..	..	.....	6	iron	.....	.....	.....	..	240	18	gravel	240	8	.75	358 50	38
..	..	.....	3	cedar	.....	.....	.....	..	80	16	gravel	80	8	.25	252 00	39
..	..	.....	....	.....	.....	.....	.....	..	.....	..	gravel	80	7	.25	150 00	40
..	..	.....	....	.....	.....	.....	.....	..	.....	..	gravel	70	7	.21	100 00	41
..	..	.....	4	cedar	.....	.....	.....	..	240	10	gravel	240	8	.75	301 03	42
..	..	.....	4	cedar	.....	.....	80	30	80	16	gravel	80	6	.25	200 00	43
..	..	.....	2	cedar	.....	.....	.....	..	240	16	gravel	240	4	.75	301 81	44
..	..	.....	....	.....	.....	.....	.....	..	30	12	earth	30	8	.09	197 52	45
..	..	.....	3	cedar	.....	.....	.....	..	170	16	gravel	170	5	.53	300 00	46
..	..	.....	....	.....	.....	.....	.....	..	240	8	gravel	240	6	.75	301 25	47
..	..	.....	1	iron	.....	.....	.....	..	20	18	stone	20	8	.06	156 50	48
..	..	.....	1	wood	earth	60	.....	..	15	22	gravel	85	8	.31	200 00	49
..	..	.....	....	.....	.....	.....	.....	..	.....	..	.....	.....	..	1.00	313 38	50

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL
ONTARI

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	WEST DIVISION.—*Continued.*								
51	McKenzie, lot 35, con. 1	.....	....	.....	....	.....	....	....	.....
52	McMurrich and Ryerson road	.....	....	.....	....	.....	....	....	.....
53	McMurrich, Beggsboro Creek road	.....	....	.....	....	.....	....	....	.....
54	McLean, Lake Shore road	.....	....	.....	....	.....	....	....	.....
55	Medonte, lot 11, con. 11	.....	....	.....	....	.....	....	....	.....
56	Medonte, lot 20, con. 12	.....	....	.....	....	.....	....	....	.....
57	Medonte, lot 21, con. 12	....	....	.....	....	.....	....	....	.....
58	Medonte, con. 1, lot 55	40	20	40	20	.....	....	....	.....
59	Medonte, sideroad 10-11, con. 12	60	24	106	24	.....	....	....	.....
60	Medora, Ferndale road	.....	....	.....	....	.....	....	....	.....
61	Medora, Peninsula road	.....	....	.....	....	.....	....	....	.....
62	Medora and Wood, Long Point road	(no rep	rt)	.....	....	.....	....	....	.....
63	Mills, con. 12, lot 11	.....	....	160	16	gravel	160	8	.....
64	Mills, lots 22-28, con. 8	120	33	80	20	gravel	120	6	.....
65	Mills, 30th sideroad	.....	....	.....	....	.....	....	....	.....
66	Monteith, Axe Lake road	.....	....	.....	....	.....	....	....	.....
67	Morrison Township roads	.....	....	.....	....	.....	....	....	.....
68	Muskoka, Musquosh road	.....	....	.....	....	.....	....	....	.....
69	Nipissing, 5th sideroad	780	40	320	18	.....	....	....	.....
70	Nipissing, cons. 10-14	.....	....	.....	....	.....	....	....	.....
71	Nipissing and Rosseau road	.....	....	.....	....	.....	....	....	.....
72	North Orillia sideroad 15-16	.....	....	.....	....	.....	....	....	.....
73	North Orillia, Boyd road	.....	....	.....	....	.....	....	....	.....
74	Oakley, Mud Lake road	.....	....	.....	....	.....	....	....	.....
75	Orillia, Muskoka road	.....	....	.....	....	.....	....	....	.....
76	Orillia, Rama road	.....	....	.....	....	.....	....	....	.....
77	Oro, lots 21-22, con. 11	.....	....	.....	....	.....	....	....	8
78	Patterson, North side Restoule L.	.....	....	.....	....	.....	....	....	.....
79	Patterson, West bd. lot 24	.....	....	.....	....	.....	....	....	.....
80	Pringle and Gurd, T.L.	.....	....	.....	....	.....	....	....	.....
81	Pringle and Mills, 5th sideroad	.....	....	160	14	gravel	160	7	.....
82	Ridout, Baysville road	.....	....	.....	....	.....	....	....	.....
83	Ryde Township roads	.....	....	.....	....	.....	....	....	.....
84	Ryde Township road, con. 10	.....	....	.....	....	.....	....	....	.....
85	Ryerson, lots, 1-10, con. 12	.....	....	.....	....	.....	....	....	.....
86	South Orillia road, cons. 1-2	.....	....	.....	....	.....	....	....	.....
87	Spence, Sudgen road	.....	....	.....	....	.....	....	....	.....
88	Stephenson, Utterson road	.....	....	.....	....	.....	....	....	.....
89	St. Edmunds, Bury road	.....	....	.....	....	.....	....	....	.....
90	Stisted, sideroad 15-16	.....	....	.....	....	.....	....	....	.....
91	Strong, con. 13, lot 14	330	40	.....	....	.....	....	....	.....
92	Strong, 10th sideroad, con. 7	80	30	160	16	.....	....	....	.....
93	Strong, cons. 13-14	.....	....	.....	....	.....	....	....	.....
94	Sunnidale Township roads	.....	....	.....	....	.....	....	....	.....
95	Tay, lot 8, con. 4	.....	....	.....	....	.....	....	....	.....
96	Tay, Victoria Harbour road	.....	....	.....	....	.....	....	....	.....
97	Tay, Port Severn road	.....	....	.....	....	.....	....	....	.....
98	Tay, con. 4 to C.P.R.	.....	....	.....	....	.....	....	....	.....
	Total	3,930	....	2,716	....	.....	1650	....	1,611

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES, O, 1919.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD									NUMBER
							Side-Brushed		Graded and Shaped		SURFACED			MILEAGE	EXPENDITURE	
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		$ c.	
..	..	.....	5	cedar	.....	.....	.....	..	240	12	gravel	240	12	.75	300 00	51
..	..	.....	...	.....	.....	.....	.....	..	640	16	gravel	640	8	2.00	305 75	52
..	..	.....	...	.....	stone	234	.....	..	.....	..	.....	.....	..	.00	300 00	53
..	..	.....	...	.....	.....	.....	.....	..	320	18	gravel	100	5	1.50	205 20	54
..	..	.....	...	.....	.....	.....	.....	..	140	18	gravel	45	7	.44	100 00	55
..	..	.....	...	.....	earth	400	.....	..	40	18	.....	.....	..	.12	100 00	56
..	..	.....	...	.....	.....	.....	.....	..	44	20	gravel	44	8	.14	200 00	57
..	..	.....	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	.12	100 00	58
..	..	.....	1	iron	.....	.....	.....	..	.....	..	gravel	90	7	.52	250 00	59
..	..	.....	4	wood	.....	.....	300	50	240	18	gravel	240	7	1.75	400 00	60
..	..	.....	...	.....	.....	.....	600	50	200	18	gravel	200	5	2.00	500 00	61
..	..	.....	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	.00	450 00	62
..	..	.....	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	.50	286 38	63
..	..	.....	2	cedar	.....	.....	.....	..	.....	..	.....	.....	..	.38	200 00	64
..	..	.....	2	cedar	.....	..	.....	..	160	12	gravel	160	8	.50	300 00	65
..	..	.....	4	wood	.....	.....	640	20	80	8	gravel	80	12	2.00	300 00	66
..	..	.....	...	.....	.....	.....	.....	..	480	20	gravel	200	5	1.50	300 00	67
..	..	.....	...	.....	.....	.....	.....	..	1,200	18	gravel	400	5	4.00	503 33	68
1	16	cedar	1	cedar	.....	.....	.....	..	.....	..	.....	.....	..	2.50	513 75	69
..	..	.....	5	cedar	.....	.....	.....	..	320	16	gravel	320	8	1.00	305 78	70
..	..	.....	2	cedar	.....	.....	.....	..	160	16	gravel	160	6	.50	199 00	71
..	..	.....	2	tile	.....	.....	.....	..	.....	..	gravel	190	6	.59	300 00	72
..	..	.....	...	.....	.....	.....	60	30	60	24	.....	.....	..	.18	175 00	73
..	..	.....	...	.....	.....	.....	200	50	160	18	gravel	100	5	1.50	200 00	74
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	130	7	.41	280 00	75
..	..	.....	...	.....	.....	.....	.....	..	.....	..	stone	56	7	.16	250 00	76
..	..	.....	...	.....	.....	.....	.....	..	440	22	gravel	70	7	1.38	207 60	77
..	..	.....	2	cedar	.....	.....	.....	..	150	14	gravel	150	7	.47	250 75	78
..	..	.....	6	wood	.....	.....	.....	..	160	16	gravel	160	6	.50	299 43	79
..	..	.....	7	cedar	.....	.....	.....	.	240	16	gravel	240	6	.75	300 71	80
1	16	cedar	1	cedar	.....	.....	.....	..	.....	..	.....	.....	..	.50	300 00	81
..	..	.....	...	.....	.....	.....	200	40	320	16	gravel	200	5	1.50	300 00	82
..	..	.....	2	wood	stone	5	10	..	250	18	gravel	250	5	2.00	300 00	83
..	..	.....	3	stone	.....	.....	100	40	600	18	gravel	400	12	2.00	200 00	84
..	..	.....	6	cedar	.....	.....	160	16	320	16	gravel	320	6	1.00	300 00	85
..	..	.....	...	.....	earth	160	.....	..	72	20	gravel	84	7	.26	198 00	86
..	..	.....	...	.....	.....	.....	.....	..	240	14	gravel	240	6	.75	399 92	87
..	..	.....	6	iron	.....	.....	1,000	50	1,200	20	gravel	1,200	6	4.50	355 26	88
..	..	.....	2	wood	stone	40	.....	..	.....	..	gravel	130	7	.41	250 00	89
..	..	.....	...	.....	.....	.....	160	30	160	16	gravel	160	5	.50	399 28	90
..	..	.....	3	cedar	.....	.....	.....	..	.....	..	.....	.....	..	1.03	300 00	91
..	..	.....	2	cedar	.....	.....	.....	..	.....	..	.....	.....	..	.50	256 50	92
..	..	.....	...	.....	earth	225	.....	..	.....	..	.....	.....	..	.00	303 00	93
..	..	.....	1	iron	.....	.....	.....	.	960	24	gravel	659	8	3.00	500 00	94
..	..	.....	1	concrete	clay	710	.....	..	.....	..	.....	.....	..	.02	420 00	95
..	..	.....	...	.....	stone	90	.....	..	.....	..	gravel	45	7	.16	203 40	96
..	..	.....	4	stone	stone	330	.....	..	.....	..	gravel	230	7	2.00	500 60	97
..	..	.....	...	.....	.....	.....	.....	..	100	20	gravel	100	8	.31	200 00	98
9	..	.....	192	.....	.....	11,654	4,940	..	17,916	..	.....	16,273	..	87.65	40,745 06	

SCHEDULE SHOWING THE AMOUNT OF ROAD CONSTRUCTION,

NUMBER	TOWNSHIP	CLEARED AND STUMPED		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length rods	Width, feet
	WEST DIVISION.							
1	Albemarle By-law No. 574	60	25	696	18	gravel	1,243	8
2	Amabel By-law No. 218	.....	....	250	18	gravel	437	7
3	Chapman By-law 5	.....	....	1,848	18	gravel	1,570	8
4	Draper By-law No. 378	1,380	50	5,210	18	gravel	620	7
5	Eastnor By-law No. 34	.....	....	40	20	gravel	1,143	8
6	Himsworth South By-law No. 58B	.....	....	160	22	gravel	160	6
7	Joly By-law No. 169	10	16	115	18	gravel	115	7
8	Keppel By-law No. 12	640	18	575	18	stone	854	8
9	Lindsay By-law No. 285	.....	....	675	18	gravel	901	7
10	Macaulay By-law No. 60	480	50	2,200	18	gravel	990	5
11	Machar By-law 552	215	24	202	22	gravel	278	7
12	Matchedash By-law No. 197	50	40	.....	....	gravel	390	8
13	Medonte By-law No. 564	.....	....	1,405	18	gravel	490	7
14	Medora and Wood By-law No. 322	3,322	50	1,900	18	gravel	900	7
15	Monck By-law No. 460	200	50	4,811	20	gravel	1,285	7
16	Muskoka By-law No. 289	1,020	50	3,787	18	gravel	1,347	7
17	Oro By-law No. 449	330	66	45	22	gravel	165	7
18	Orillia By-law No. 968	100	10	360	20	gravel	765	8
19	Perry, By-law No. 144	220	20	.....	....	gravel	229	8
20	Sarawak By-law No. 7	.....	....	505	20	stone	793	7
21	St. Edmunds By-law No. 232	50	15	170	20	gravel	305	7
22	Stisted By-law No. 238	300	50	1,240	18	gravel	340	7
23	Strong By-law No. 403	.....	....	80	24	gravel	203	6
24	Tay By-law No. 676	.....	....	777	20	gravel	885	7
25	Tiny By-law No. 593	220	40	875	20	gravel	530	7
26	Vespra By-law No. 619	30	35	120	20	gravel	750	7
27	Watt By-law No. 520	640	40	1,395	20	gravel	415	7
28	Tiny By-law No. 565, 1918	.....	....	930	22	gravel	395	7
	Total	9,267	....	30,371	....	.....	18,498	....

COLONIZATION ROADS BRANCH, UNDER MUNICIPAL BY-LAWS, 1919.

DITCHED	CUT OR FILL		BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER
Length, rods	Material	Amount in Cubic yards	Number	Span, feet	Material	Number	Material				
										$ c.	
.....	rock	20	.....	.....	.....	6	wood	.....	5.50	750 00	1
.....	earth	270	.....	.....	.....	.....	.....	.....	2.50	500 00	2
.....	.....	.....	3	12	wood	12	wood	.....	9.00	1,000 00	3
30	earth	160	2	18	wood	37	wood	.....	21.00	496 89	4
200	earth	200	.....	.....	.....	.....	.....	.....	4.00	700 00	5
50	.....	.....	.....	.....	.....	.....	.....	.....	.55	100 00	6
.....	.....	.....	.....	.....	.....	1	wood	.....	.40	100 00	7
.....	.....	.....	.....	.....	.....	8	wood	.....	8.00	1,000 00	8
.....	rock	16	.....	.....	.....	2	wood	.....	3.50	900 00	9
.....	earth	30	.....	.....	.....	13	wood	.....	8.00	500 00	10
.....	.....	.....	1	12	wood	.....	.....	.....	1.00	300 00	11
.....	.....	.....	.....	.....	.....	4	wood	.17	1.25	300 00	12
.....	earth	660	1	18	cem'nt	.....	.....	.....	5.00	800 00	13
.....	.....	.....	1	16	wood	13	wood	.....	18.00	700 00	14
.....	rock	60	.....	.....	.....	28	wood	.....	29.00	1,520 16	15
.....	.....	.....	42	16	wood	30	wood	.....	14.00	1,000 00	16
.....	earth	1,015	.....	.....	.....	.....	.....	1.00	.75	525 00	17
.....	.....	.....	.....	.....	.....	2	concrete	.....	2.50	1,000 00	18
215	rock	15	.....	.....	.....	4	wood	.....	.75	150.00	19
.....	.....	.....	.....	.....	.....	2	wood	.....	2.50	797 13	20
.....	.....	.....	.....	.....	.....	.....	.....	.....	1.50	300 00	21
.....	.....	.....	.....	.....	.....	6	wood	.....	4.00	300 00	22
.....	.....	.....	.....	.....	.....	1	metal	.....	.75	199 47	23
.....	stone	360	1	30	cedar	4	metal	.....	4.00	1,000 00	24
20	earth	100	.....	.....	.....	5	metal	.75	3.00	600 00	25
.....	earth	430	.....	.....	.....	1	wood	.....	3.00	500 00	26
.....	earth	600	.....	.....	.....	.....	.....	.....	6.00	500 00	27
125	.....	.....	.....	.....	.....	1	metal	.....	4.00	400 00	28
640	.....	3,936	13	.....	.....	180	.....	1.92	163.45	16,938.65	

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	EAST DIVISION.								
1	Addington road, Kaladar-Denbigh								320
2	Admaston, Shamrock & Mt. St. Patrick								
3	Admaston, Briscoe road								
4	Admaston, Douglas-Mt. St. Patrick								
5	Admaston, Admaston-Station road								
6	Admaston, Shamrock-Dacre road								
7	Admaston, Douglas road								
8	Admaston, lots 1-12, con. 2-12								
9	Alice and Fraser, con. A, lots 15-16								
10	Alice and Fraser, B. line, lot 30								
11	Alice and Fraser, con. 8, lot 14								
12	Alice and Fraser, con. 12, lot 31								
13	Alice and Fraser, con. 12, lot 23								
14	Alice and Fraser, T.L., lot 1								
15	Alice and Fraser, Eganville road								
16	Airy Township roads	260	40	260	18				
17	Anstruther Township road								
18	Asphodel and Dummer road								
19	Badgerow, con. 1, lots 8-9								
20	Badgerow and Hugel, con. 3								
21	Bagot and Blythfield, lot 30, con. 8								
22	Bagot and Blythfield, T. L. road								
23	Bagot and Blythfield, Ashdad Station								
24	Bagot and Blythfield, con. 9								
25	Bagot and Blythfield, lot 25, con. 9								
26	Bagot and Blythfield, Fraser road								
27	Bagot and Blythfield, Becker road								
28	Bagot and Blythfield, lots 10-23								
29	Bangor, Wicklow and McClure Tp. rds.								
30	Barrie & Kennebec Tp. road								
31	Barrie, Harlowe-Addington road								
32	Beckwith, Scott's cor. road								
33	Beckwith, Fourth line road								
34	Beckwith, Eleventh line road								
35	Belmont Tp. Factory road								
36	Bexley Tp., Cameron road					stone	65	7	
37	Bexley, Victoria road								
38	Bonfield Township roads	85	40	85	40	gravel	40	6	3
39	Boulter Township roads	480	40	210	16	gravel	40	6	
40	Bromley, Black Bay road								
41	Bromley, Proving line, con. 9								
42	Bromley, Douglas, 8th line								
43	Bromley, Douglas-Caldwell road								
44	Bromley and Westmeath T. L.								
45	Brunell and Lyndock, con. 16								
46	Brunell and Lyndock, Malone Swamp								
47	Brunell and Lyndock, Whalen's Swamp								
48	Brunell and Lyndock, lot 33, con. 4								
49	Brunel and Lyndock, Malley Church								
50	Brunel and Lyndock, lots 33-35								

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES.
9.—*Continued.*

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD										
							Side Brushed		Graded and Shaped		SURFACED						
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	MILEAGE	EXPENDITURE		NUMBER
															$	c.	
..	..	.....	21	wood	earth	3,500	340	10	480	16	gravel	1,500	8	6.00	7,078	30	1
..	..	.....	...	.....	.....	.....	.....	..	120	30	gravel	120	10	.38	200	00	2
..	..	.....	...	.....	.....	.....	.....	..	160	30	gravel	160	10	.50	200	00	3
..	..	.....	2	tile	.....	.....	.....	..	80	24	gravel	80	10	.25	108	00	4
..	..	.....	...	.....	.....	.....	.....	..	120	24	gravel	120	10	.38	150	00	5
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	10	.25	207	28	6
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	80	6	.25	152	00	7
..	..	.....	...	.....	.....	.....	.....	..	160	40	gravel	160	10	.50	349	50	8
..	..	.....	1	cedar	.....	.....	.....	..	.....	..	gravel	80	10	.25	112	00	9
..	..	.....	...	.....	.....	.....	.....	..	120	30	gravel	120	10	.38	151	00	10
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	12	.25	150	00	11
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	10	.25	150	00	12
..	..	.....	...	.....	.....	.....	.....	..	40	24	gravel	40	7	.25	104	00	13
..	..	.....	...	.....	.....	.....	.....	..	40	30	gravel	40	6	.12	104	00	14
..	..	.....	...	.....	.....	.....	.....	..	120	24	gravel	120	10	.38	252	50	15
..	..	.....	16	wood	.....	.....	.....	..	775	16	gravel	310	6	3.00	1,018	00	16
..	..	.....	...	.....	.....	.....	.....	..	100	18	earth	132	5	.42	200	00	17
..	..	.....	...	.....	.....	.....	.....	..	35	20	gravel	42	5	.24	100	00	18
2	14	wood	...	.....	.....	.....	.....	..	.....	..	gravel	80	6	.50	300	00	19
..	..	.....	...	.....	earth	250	400	8	120	20	gravel	200	8	3.00	565	35	20
2	12	wood	...	.....	.....	.....	.....	..	40	25	gravel	40	10	.12	50	00	21
..	..	.....	1	cedar	.....	.....	.....	..	40	24	stone	40	10	.12	50	00	22
..	..	.....	...	.....	.....	.....	.....	..	160	24	gravel	160	10	.50	200	00	23
..	..	.....	...	.....	.....	.....	.....	..	160	18	gravel	160	6	.50	101	63	24
..	..	.....	...	.....	.....	.....	.....	..	120	24	gravel	120	6	.38	100	50	25
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	10	.25	105	50	26
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	10	.25	100	62	27
..	..	.....	6	cedar	.....	.....	.....	..	640	24	gravel	640	10	2.00	900	00	28
1	14	cedar	4	cedar	earth	300	80	20	560	14	gravel	240	6	2.25	1,007	15	29
..	..	.....	...	.....	.....	.....	.....	..	150	14	gravel	135	8	.75	300	00	30
..	..	.....	5	wood	stone	55	20	10	27	14	gravel	190	6	.50	300	00	31
..	..	.....	...	.....	.....	.....	.....	..	120	74	gravel	120	10	.38	200	00	32
..	..	.....	...	.....	.....	.....	.....	..	120	30	gravel	120	10	.38	203	80	33
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	10	.25	200	62	34
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	75	5	.22	100	00	35
..	..	.....	3	wood	.....	.....	40	55	18	30	gravel	167	5	.65	515	35	36
..	..	.....	...	.....	.....	.....	.....	..	60	18	gravel	52	5	.25	100	00	37
..	..	.....	10	wood	stone	223	.....	..	1,125	16	gravel	650	5	5.25	1,656	57	38
..	..	.....	5	wood	.....	.....	.....	..	.....	..	.....	.....	..	1.50	464	75	39
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	160	6	.50	150	00	40
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	6	.25	203	75	41
..	..	.....	...	.....	.....	.....	.....	..	40	24	gravel	40	6	.12	75	00	42
..	..	.....	...	.....	.....	.....	.....	..	160	24	gravel	160	6	.50	223	48	43
..	..	.....	...	.....	.....	.....	.....	..	160	24	gravel	160	6	.50	303	00	44
..	..	.....	...	.....	.....	.....	.....	..	160	24	loam	160	6	.50	204	55	45
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	40	6	.12	103	50	46
..	..	.....	...	.....	.....	.....	.....	..	160	24	gravel	160	6	.50	150	00	47
..	..	.....	2	cedar	.....	.....	.....	..	80	24	gravel	80	6	.25	100	00	48
..	..	.....	...	.....	.....	.....	.....	..	160	24	gravel	160	6	.50	250	50	49
..	..	.....	...	.....	.....	.....	.....	..	240	24	gravel	240	6	.75	200	00	50

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	EAST DIVISION.—*Continued.*								
51	Brunell and Lyndock, Roche road ..	.....	....	.....	....	.....	....	....	.....
52	Brougham, Bruce Hill and Dacre road	.....	....	.....	....	.....	....	....	.....
53	Brougham, Lanes Corner to Church.	.....	....	.....	....	.....	....	....	.....
54	Brougham, Kennelly Mountain road.	.....	....	.....	....	.....	....	....	.....
55	Brougham, Dacre & Mt. St. Patrick..	.....	....	.....	....	.....	....	....	.....
56	Burleigh road	.....	....	.....	....	.....	....	....	.....
57	Calabogie and Ashdad road	.....	....	.....	....	.....	....	....	.....
58	Calvin Township roads	.....	....	.....	....	.....	....	....	20
59	Cameron Township roads	280	40	175	16	gravel	30	6	.....
60	Carden Township roads	.....	....	.....	....	.....	....	....	.....
61	Carlow, Ryan road	.....	....	.....	....	.....	....	....	.....
62	Carlow, Douglas road	.....	....	.....	....	.....	....	....	.....
63	Cavendish, White Lake road	.....	....	.....	....	.....	....	....	.....
64	Cavendish, cons. 1-6	.....	....	.....	....	.....	....	....	.....
65	Chandos Township, Post road	.....	....	.....	....	.....	....	....	.....
66	Chandos, Tanner road	.....	....	.....	....	.....	....	....	.....
67	Chandos, Scott road	.....	....	.....	....	.....	....	....	.....
68	Chandos, Couch road	.....	....	.....	....	.....	....	....	.....
69	Chandos, Wellington road	.....	....	.....	....	.....	....	....	.....
70	Chisholm Township roads	675	40	525	16	gravel	30	6	.....
71	Clarendon and Plevna road	.....	....	.....	....	.....	....	....	950
72	Clarendon, Clarendon and Plevna road	.....	....	.....	....	.....	....	....	.....
73	Clarendon, Mountain road	.....	....	.....	....	.....	....	....	.....
74	Clarendon, Plevna and Lavant road ..	.....	....	.....	....	.....	....	....	.....
75	Dalton, Monck road	.....	....	.....	....	.....	....	....	.....
76	Dalton Township roads	.....	....	.....	....	.....	....	....	.....
77	Darling, con. 8, lot 15	.....	....	.....	....	.....	....	....	.....
78	Darling, con. 1, lots 16-17	.....	....	120	24	gravel	120	6	.....
79	Denbigh and Renfrew Boundary road	.....	....	.....	....	.....	....	....	.....
80	Denbigh, Rose Hill and Vennacher road	.....	....	.....	....	.....	....	....	.....
81	Douro Township road	.....	....	.....	....	.....	....	....	.....
82	Dummer, Factory road	.....	....	.....	....	.....	....	....	.....
83	Dummer, Church line road	.....	....	.....	....	.....	....	....	.....
84	Dummer, Stoney Lake road	.....	....	.....	....	.....	....	....	.....
85	Dungannon Township roads	.....	....	.....	....	.....	....	....	.....
86	Dysart, Haliburton-Eagle Lake road.	68	66	.....	....	.....	....	....	.....
87	Elziver Township roads	.....	....	.....	....	.....	....	....	.....
88	Ennismore, Pigeon Creek road	.....	....	.....	....	.....	....	....	.....
89	Ennismore, Gannons Narrows road..	.....	....	.....	....	.....	....	....	.....
90	Faraday, Township roads	120	40	120	16	.....	....	....	.....
91	Faraday and Herschel Twp. roads ..	.....	....	.....	....	.....	....	....	.....
92	Ferris Township roads	360	40	170	16	gravel	20	6	.....
93	Field and Bastedo, Field road	120	40	.....	....	.....	....	....	.....
94	Galway, Bobcaygeon road	.....	....	.....	....	.....	....	....	.....
95	Feronia and Widdifield road	240	40	240	16	earth	240	6	.....
96	Glamorgan, Monck road	.....	....	.....	....	.....	....	....	.....
97	Glamorgan, Kinmount Sta., Minden rd.	.....	....	.....	....	.....	....	....	.....
98	Grattan, Caldwell Station road	.....	....	.....	....	.....	....	....	.....
99	Grattan, Fourth Chute road	.....	....	.....	....	.....	....	....	.....
100	Grattan, McGrath road	.....	....	.....	....	.....	....	....	.....

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES.
9.—*Continued.*

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD									
							Side Brushed		Graded and Shaped		SURFACED					
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Meterial	Length, rods	Width, feet	MILEAGE	EXPENDITURE	NUMBER
															$ c.	
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	120	6	.41	133 00	51
..	..	.....	...	.....	.....	.....	.....	..	24	16	gravel	80	6	.25	154 00	52
..	..	.....	...	.....	.....	.....	.....	..	120	24	gravel	120	6	.50	152 50	53
..	..	.....	...	.....	.....	.....	.....	..	40	24	gravel	80	6	.50	101 50	54
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	6	.25	100 00	55
..	..	.....	2	cedar	.....	.....	.....	..	.....	..	stone	180	5	.56	699 07	56
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	6	.25	107 70	57
..	..	.....	6	wood	.....	.....	.....	..	525	16	gravel	925	6	3.00	1,183 35	58
..	..	.....	5	wood	.....	.....	.....	..	320	16	gravel	240	6	1.85	602 50	59
..	..	.....	3	tile	.....	.....	90	8	822	16	gravel	368	5	3.00	601 54	60
..	..	.....	...	.....	.....	.....	40	20	160	14	.....	.....	..	.50	217 25	61
..	..	.....	...	.....	.....	.....	.....	..	80	16	gravel	80	7	.25	100 50	62
..	..	.....	...	.....	.....	.....	.....	..	100	16	.....	.....	..	.31	100 00	63
..	..	.....	...	.....	.....	.....	.....	..	105	16	.....	.....	..	.32	100 00	64
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	118	5	.35	149 50	65
..	..	.....	1	wood	.....	.....	.....	..	100	16	.....	.....	..	.31	100 55	66
..	..	.....	...	.....	.....	.....	108	16	.....	..	stone	34	6	.10	147 00	67
..	..	.....	3	stone	.....	.....	.....	..	34	16	gravel	50	16	.15	99 89	68
..	..	.....	...	.....	.....	.....	.....	..	45	16	stone	45	5	.13	100 00	69
1	16	wood	17	wood	.....	.....	.....	..	230	16	gravel	380	6	5.00	1,500 00	70
..	..	.....	6	wood	stone	1,180	108	16	370	16	gravel	980	6	4.00	1,500 00	71
..	..	.....	...	.....	.....	.....	.....	..	63	16	gravel	208	8	2.00	401 80	72
..	..	.....	...	.....	stone	60	.....	..	100	40	gravel	40	6	4.00	100 00	73
..	..	.....	...	.....	earth	360	.....	..	97	16	.....	.....	..	.50	300 00	74
..	..	.....	...	.....	.....	.....	.....	..	640	16	gravel	81	5	2.00	100 00	75
..	..	.....	...	.....	.....	.....	45	10	2,390	18	gravel	279	6	7.00	400 00	76
..	..	.....	2	cedar	.....	.....	.....	..	80	24	gravel	80	6	.25	300 75	77
..	..	.....	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	.38	200 00	78
..	..	.....	...	.....	.....	.....	.....	..	960	18	gravel	160	5	4.50	199 80	79
..	..	.....	...	.....	.....	.....	.....	..	40	14	gravel	55	7	.25	103 89	80
..	..	.....	...	.....	.....	.....	.....	..	120	18	gravel	300	5	.94	200 50	81
..	..	.....	...	.....	.....	.....	.....	..	50	20	stone	40	5	.15	100 00	82
..	..	.....	...	.....	.....	.....	.....	..	70	18	gravel	70	5	.21	99 95	83
..	..	.....	...	.....	.....	.....	150	10	.....	..	stone	191	5	1.59	777 00	84
..	..	.....	3	tile	.....	.....	160	20	280	16	gravel	120	7	1.00	811 07	85
..	..	.....	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	2.12	686 69	86
..	..	.....	...	.....	.....	.....	.....	..	160	16	gravel	160	7	.50	208 80	87
..	..	.....	...	.....	.....	.....	.....	..	85	20	gravel	85	5	.26	102 00	88
..	..	.....	...	.....	.....	.....	.....	..	80	22	gravel	62	5	.35	200 00	89
..	..	.....	4	cedar	.....	.....	.....	..	580	16	gravel	420	7	2.00	707 39	90
..	..	.....	2	cedar	.....	.....	160	20	320	14	gravel	160	7	1.00	303 50	91
..	..	.....	26	wood	.....	.....	.....	..	1,480	16	gravel	1440	7	9.00	1,411 75	92
..	..	.....	...	.....	earth	400	.....	..	.....	..	.....	.....	..	.38	650 00	93
..	..	.....	...	.....	.....	.....	.....	..	150	18	gravel	65	5	.66	502 55	94
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	.....	..	.75	279 99	95
..	..	.....	...	.....	.....	.....	30	10	165	16	gravel	150	6	2.00	312 00	96
..	..	.....	5	wood	stone	220	85	18	80	18	gravel	105	8	.66	414 12	97
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	10	.25	101 00	98
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	80	10	.25	200 00	99
..	..	.....	...	.....	.....	.....	.....	..	320	24	gravel	320	10	1.00	203 75	100

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	EAST DIVISION.—*Continued.*								
101	Grattan, O'Brien road								
102	Grattan, Opeongo line road								
103	Grattan, Gorman road								
104	Grattan, Dacre and Caldwell road								
105	Griffith and Matawatchan Tp. roads								
106	Griffith and Dacre Township roads								
107	Hagerty, Richards and Burns roads	80	40	40	24	gravel	40	10	
108	Harvey Township roads								
109	Head, Clara and Maria Twp. roads	400	40	160	16				
110	Herschel, Mud Creek bridge, fill								
111	Hinchinbrooke Township roads								
112	Horton Township roads								
113	Howe Island Ferry road								
114	Hungerford Township roads								
115	Huntingdon Township roads								
116	Kennebec Tp., Arden and Horseshoe								
117	Laxton, Digby and Longford roads								
118	Limerick Township roads								
119	Loughboro, Eel Lake road								
120	Lutterworth Township roads								
121	Lyell Township roads	280	40	280	16				
122	Madawaska and Hastings Twp. roads								
123	Madoc Township roads								
124	Mattawan Township roads								
125	Mayo Township roads								
126	McNabb Township roads								
127	Methune Township roads								
128	Miller, Abinger and Miller road								
129	Minden and Dorset Township roads	840	30	225	16	gravel	60	6	
130	Monmouth Township roads								
131	Monteagle and Herschel Twp. roads								10
132	Noelville-St. Charles roads								
133	North Algona Township roads								
134	North Crosby Township roads								
135	Olden Township roads								
136	Oso, Crow Lake road								310
137	Oso, Armstrong road	42	40	42	20	gravel	42	6	
138	Oso and Bedford road	87	20	87	20				
139	Pakenham Township roads								
140	Palmerston Township roads	280	40	80	18	gravel	245	6	178
141	Papineau Township roads								
142	Pembroke Township roads								
143	Pettawawa Township roads								
144	Phelps Township road	305	40	370	18	gravel	9	10	
145	Radcliffe Township roads								
146	Raglan Township roads								160
147	Rama Township roads	300	15						
148	Ramsay, 7th line road								
149	Ratter, lot 2, con. 2								
150	Ratter, Hagar-St. Charles	640	40	600	20				

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES,
9.—*Concluded.*

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD										
							Side-Brushed		Graded and Shaped		SURFACED						
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	MILEAGE	EXPENDITURE		NUMBER
															$	c.	
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	10	.25	99	00	101
..	..	.....	...	.....	.....	.....	.....	..	120	24	gravel	120	10	.38	150	00	102
..	..	.....	...	.....	.....	.....	.....	..	120	24	gravel	120	10	.38	156	25	103
..	..	.....	...	.....	.....	.....	.....	..	80	24	gravel	80	10	.25	231	00	104
..	..	... ..	6	cedar	.....	.....	.....	..	340	24	gravel	540	5	1.50	942	00	105
..	..	.....	2	cedar	.....	.....	.....	..	720	24	gravel	720	10	2.25	714	75	106
..	..	.....	2	wood	.....	.....	.....	..	1,640	24	gravel	2,160	10	7.12	2,201	68	107
..	..	.....	1	tile	.....	.....	.....	..	60	18	gravel	222	5	.69	420	75	108
..	..	.....	3	wood	.....	.....	.....	..	50	16	gravel	20	6	2.50	402	50	109
1	93	wood	...	.....	earth	850	.....	..	16	22	.....	.....	..	10.00	3,445	44	110
..	..	.....	5	tile	earth	110	.....	..	340	14	gravel	133	12	1.41	698	30	111
..	..	.....	...	.....	.....	.....	.....	..	160	24	gravel	160	10	.50	200	00	112
..	..	.....	...	.....	stone	157	.....	..	.....	..	gravel	20	5	.06	400	60	113
..	..	.....	...	.....	.....	.....	.....	..	100	16	gravel	200	7	1.00	384	44	114
..	..	.....	...	.....	.....	.....	.....	..	80	14	gravel	80	7	.25	100	50	115
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	175	8	.50	201	11	116
..	..	.....	6	stone	earth	45	8	16	426	18	gravel	243	7	6.25	601	42	117
..	..	.....	3	cedar	.....	.....	.....	..	160	14	gravel	320	7	1.00	200	97	118
..	..	.....	3	tile	.....	.....	...	..	147	18	gravel	129	8	.50	201	15	119
..	..	.....	3	wood	.....	.....	507	16	97	18	gravel	142	6	2.50	316	70	120
..	..	.....	3	wood	.....	.....	.....	..	180	16	.....	.....	..	1.50	527	50	121
..	..	.....	5	wood	.....	.....	.....	..	470	16	gravel	20	6	1.50	520	00	122
..	..	.....	2	iron	stone	100	.....	..	40	16	gravel	40	7	.12	200	75	123
..	..	.....	7	wood	.....	.....	.....	..	350	16	gravel	140	6	1.75	607	00	124
..	..	.....	3	cedar	cord'y	110	.....	..	200	16	gravel	220	7	1.00	632	14	125
..	..	.....	...	.....	.....	.....	.....	..	440	30	gravel	440	10	1.50	1,208	00	126
..	..	.....	2	cedar	.....	.....	.....	..	134	16	gravel	280	5	.89	302	00	127
..	..	.....	...	.....	earth	40	.....	..	40	14	gravel	190	8	.50	200	00	128
13	16	wood	25	wood	stone	20	2,995	10	3,429	16	gravel	2,100	5	14.00	2,733	97	129
1	15	wood	10	wood	.....	.....	395	40	640	20	gravel	1,100	5	3.75	700	00	130
..	..	.....	3	cedar	.....	.....	80	20	564	20	gravel	360	5	2.25	913	64	131
1	16	wood	2	wood	earth	81	2,080	50	80	18	.....	.....	..	6.00	2,493	63	132
..	..	.....	...	.....	.....	.....	.....	..	80	30	gravel	200	10	.62	378	75	133
..	..	.....	1	tile	stone	177	.....	..	199	18	gravel	161	6	.75	457	65	134
..	..	.....	4	tile	.....	.....	5	20	320	18	gravel	410	6	2.25	401	75	135
..	..	.....	...	.....	.....	.....	.....	..	320	14	gravel	310	6	1.00	299	56	136
..	..	.....	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	.13	200	50	137
..	..	.....	...	.....	stone	165	.....	..	.....	..	.....	.....	..	.26	300	00	138
..	..	.....	...	.....	earth	30	.....	..	280	40	gravel	280	6	.88	700	90	139
..	..	.....	5	cedar	stone	485	.....	..	162	14	gravel	355	6	2.50	1,180	70	140
..	..	.....	14	wood	earth	30	.....	..	1,720	16	gravel	280	6	6.00	1,524	75	141
..	..	.....	...	.....	.....	.....	.....	..	640	24	gravel	640	10	2.00	881	00	142
..	..	.....	2	tile	earth	250	.....	..	440	40	gravel	440	6	1.75	599	50	143
..	..	.....	14	wood	.....	.....	.....	..	.....	..	.....	.....	..	.88	511	65	144
..	..	.....	7	cedar	.....	.....	.....	..	920	24	gravel	900	6	2.50	1,007	50	145
..	..	.....	6	cedar	.....	.....	.....	..	400	24	gravel	400	6	2.00	633	49	146
..	..	.....	...	.....	earth	30	400	20	275	7	gravel	275	7	2.75	1,204	02	147
..	..	.....	...	.....	.....	.....	.....	..	160	40	gravel	160	10	.50	299	00	148
..	..	.....	...	iron	earth	600	6	66	.....	..	.....	.....	..	.02	450	00	149
..	..	.....	13	wood	rock–c	527	.....	..	.....	..	.....	.....	..	3.00	1,500	00	150

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COI
ONTARIO,

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	EAST DIVISION.—*Continued.*								
151	Rear of Yonge Township roads	.....	....	.....	....	.....	....	....	.....
152	Rolph, Buchanan & Wylie Twp. roads	.....	....	.....	....	.....	....	....	.....
153	Ross Township roads	.....	....	.....	....	.....	....	....	.....
154	Sabine Township roads	320	40	320	18	.....	....	....	.....
155	Sebastopol Township roads	40	50	.....	....	gravel	40	10	160
156	Sheffield Township roads	.....	....	.....	....	.....	....	....	.....
157	Sherwood & Jones Township roads	.....	....	.....	....	.....	....	....	.....
158	Smith Township, Buckhorn road	.....	....	.....	....	.....	....	....	.....
159	Somerville, Bobcaygeon road	.....	....	.....	....	.....	....	....	.....
160	South Crosby Township roads	.....	....	.....	....	.....	....	....	.....
161	South Algona Township roads	.....	....	.....	....	.....	....	....	.....
162	South Algona (Dunnigan)	.....	....	.....	....	no work done		....	.....
163	Stafford Township roads	.....	....	.....	....	.....	....	....	.....
164	Storrington Township roads	.....	....	.....	....	.....	....	....	200
165	Tudor and Cashel Township roads	.....	....	.....	....	.....	....	....	.....
166	Wollaston Township roads	.....	....	.....	....	.....	....	....	.....
167	Westmeath Township roads	.....	....	.....	....	.....	....	....	.....
168	Widdifield Township roads	60	40	60	18	.....	....	....	.....
169	Wilberforce Township roads	.....	....	.....	....	.....	....	....	.....
170	Yonge, Escott road	.....	....	.....	....	.....	....	....	.....
	Total	6,974	....	4,069	....	.....	1021	....	2,311

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES, 1919.—*Concluded.*

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD									
							Side-Brushed		Graded and Shaped		SURFACED					
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	MILEAGE	EXPENDITURE	NUMBER
															$ c.	
..	..	.....	...	.....	rock	677	.....	..	45	18	.....	.....	..	.13	907 87	151
..	..	.....	3	cedar	.....	.....	.....	..	200	24	gravel	360	7	1.10	500 00	152
..	..	.....	...	.....	.....	.....	.....	..	560	24	gravel	580	6	1.75	837 00	153
..	..	.....	7	wood	.....	.....	.....	..	397	16	gravel	50	6	2.50	531 74	154
..	..	.....	3	cedar	.....	.....	.....	..	440	24	gravel	480	10	2.00	657 75	155
..	..	.....	4	wood	rock	473	20	10	223	14	gravel	410	6	1.75	901 22	156
..	..	.....	6	cedar	.....	.....	.....	..	760	20	gravel	820	6	3.00	1,203 55	157
..	..	.....	...	.....	.....	.....	.....	..	169	18	gravel	112	5	.53	301 10	158
..	..	.....	3	tile	stone	110	170	32	165	18	gravel	190	6	1.00	375 00	159
..	..	.....	...	.....	.....	.....	95	18	.....	..	gravel	301	8	1.12	397 98	160
..	..	.....	1	cedar	.....	.....	.....	..	600	24	gravel	422	6	2.00	854 75	161
..	..	.....	...	.....	.....	.....	.....	..	.....	..	.....	.....	..	.....	500 00	162
..	..	.....	...	.....	.....	.....	.....	..	240	24	gravel	240	10	.75	325 00	163
..	..	.....	4	wood	.....	.....	.....	..	267	16	gravel	479	10	1.75	700 60	164
..	..	.....	9	cedar	.....	.....	210	20	800	14	gravel	.....	..	2.50	808 86	165
..	..	.....	1	tile	.....	.....	.....	..	80	16	gravel	80	7	.25	200 00	166
..	..	.....	...	.....	.....	.....	.....	..	480	30	gravel	480	5	1.75	726 53	167
2	18	wood	13	wood	.....	.....	.....	..	535	16	gravel	1,502	7	7.00	1,374 95	168
..	..	.....	2	wood	.....	.....	.....	..	1,280	24	gravel	1,280	6	4.00	1,659 47	169
..	..	.....	...	.....	.....	.....	.....	..	.....	..	gravel	107	8	.50	100 00	170
..	75	.....	380	.....	.....	11,615	8.827	..	51.665	..	.....	39.182	..	245.81	88,101 03	

SCHEDULE SHOWING THE AMOUNT OF ROAD CONSTRUCTION, CO

NUMBER	TOWNSHIP	Cleared and Stumped		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet
	EAST DIVISION.							
1	Admaston By-law No. 231	.....	....	1,120	24	gravel	1,280	10
2	Bagot and Blythfield By-law No. 325	.....	....	520	30	gravel	520	10
3	Bedford By-law No. 37 B	.....	....	112	16	gravel	305	7
4	Belmont By-law No. 606	.....	....	120	18	stone	302	5
5	Bromley By-law No. 281	.....	....	960	30	gravel	960	10
6	Caldwell By-law No. 271	.....	....	2,265	20	gravel	740	5
7	Camden By-law No. 485	.....	....	.....	....	stone	1,628	6
8	Cardiff By-law No. 538	503	10	3,813	18	gravel	75	6
9	Carlow By-law No. 112	140	20	400	16	gravel	240	7
10	Casimer, etc., By-law No. 84	.....	....	990	20	gravel	58	7
11	Chisholm By-law No. 94	.....	....	40	18	.....	.....	....
12	Cosby and Mason By-law No. 41	.....	....	1,400	20	gravel	110	8
13	Douro By-law No. 869	.....	....	325	18	gravel	185	5
14	Dummer By-law No. 864	.....	....	820	16	stone	229	6
15	Dungannon By-law No. 89	120	20	360	16	gravel	50	7
16	Dysart By-law No. 603	3,610	12	7,310	16	gravel	1,787	5
17	Eldon By-law No. 486	.....	....	294	18	stone	586	5
18	Elzevir By-law No. 38 A	.....	....	14	14	gravel	600	7
19	Front of Leeds By-law No. 739	.....	....	265	18	stone	1,756	6
20	Grattan By-law No. 271	.....	....	1,400	30	gravel	1,400	10
21	Hinchinbrooke By-law No. 4	.....	....	862	16	gravel	1,713	8
22	Hungerford By-law No. 224	.....	....	180	14	gravel	240	7
23	Hungerford By-law No. 228	.....	....	30	16	gravel	80	5
24	Huntingdon By-law No. 406	.....	....	400	16	gravel	480	7
25	Limerick By-law No. 4	80	20	320	14	gravel	480	7
26	Loughboro By-law No. 111 A	.....	....	60	18	stone	360	8
27	Madoc By-law No. 44	.....	....	480	14	gravel	500	7
28	Marmora and Lake By-law No. 538	.....	....	720	16	gravel	880	7
29	Martland By-law No. 133	.....	....	960	20	gravel	820	6
30	Mayo By-law No. 334	40	20	280	16	gravel	160	7
31	Monteagle and Herschel By-law No. 483.	.....	....	560	14	.....	.....	....
32	Minden By-law No. 318	1,530	8	1,737	12	gravel	668	5
33	Olden By-law No. 50 B	.....	....	1,023	16	gravel	1,115	8
34	Oso By-law No. 154	15	40	774	18	gravel	1,177	7
35	Pittsburg By-law No. 4	.....	....	.....	....	stone	585	8
36	Portland By-law No. 612	.....	....	.....	....	stone	160	8
37	Rama By-law No. 362	.....	....	.....	....	stone	814	6
38	Ratter and Dunnett By-law No. 22	920	12	2,640	18	gravel	1,040	6
39	Rawdon By-law No. 403	.....	....	320	14	gravel	400	7
40	Richmond By-law No. 657	.....	....	.....	....	stone	405	8
41	Ross By-law No. 363	.....	....	1,680	30	gravel	1,680	10
42	Sheffield By-law No. 634	.....	....	64	16	gravel	265	8
43	Sherwood and Jones By-law No. 20	.....	....	940	24	gravel	940	10
44	Snowden By-law No. 198	1,150	10	2,605	16	gravel	783	6
45	Somerville By-law No. 710	114	15	236	16	gravel	528	6
46	Springer By-law No. 305	.....	....	750	20	gravel	668	8
47	Stafford By-law No. 691	.....	....	680	30	gravel	760	10
48	Stanhope By-law No. 348	50	10	2,202	16	gravel	225	7
49	Storrington By-law No. 477	.....	....	.....	....	stone	565	8
50	Tudor and Cashel By-law No. 12	.....	....	1,280	14	gravel	1,200	7
51	Tyendinaga By-law No. 681	.....	....	400	16	gravel	640	7
52	Westmeath By-law No. 220	.....	....	1,360	24	gravel	1,360	10
53	Wollaston By-law No. 1	.....	....	160	14	stone	400	7
54	Wollaston By-law No. 7 (Purchase of stone crusher)	.....	....	.....	....	.....	.....	....
	Total	8,272	....	46,281	....	.....	34,892	....

LONIZATION ROADS BRANCH, UNDER MUNICIPAL BY-LAWS, 1919.

DITCHED	CUT OR FILL		BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER
Length, rods	Material	Amount in cubic yards	Number	Span, feet	Material	Number	Material			$ c.	
.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	1,050 00	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	1.63	1,000 67	2
.....	.....	.....	.....	.....	.....	2	metal	.....	1.75	450 00	3
.....	.....	.....	.....	.....	.....	1	metal	.....	1.25	600 00	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	1,225 00	5
.....	rock	230	.....	.....	.....	2	metal	.....	15.00	1,271 01	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	5.10	1,000 00	7
125	.....	.....	.....	.....	.....	35	wood	.....	22.00	1,000 00	8
.....	.....	.....	.....	.....	.....	6	cedar	.....	1.25	450 00	9
375	.....	.....	.....	.....	.....	.....	.....	.....	5.00	550 00	10
.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	524 82	11
.....	.....	.....	.....	.....	.....	22	wood	.....	8.00	349 09	12
.....	.....	.....	.....	.....	.....	.....	.....	.....	1.10	150 00	13
.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	300 00	14
.....	.....	.....	.....	.....	.....	10	cedar	.....	1.12	300 00	15
400	earth	200	.....	.....	.....	35	wood	.....	57.00	2,986 87	16
20	.....	.....	1	35	cem't	2	metal	.....	2.00	799 60	17
.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	400 00	18
.....	.....	.....	.....	.....	.....	6	metal	.....	6.00	1,427 32	19
.....	.....	.....	.....	.....	.....	.....	.....	.....	4.50	1,009 80	20
1,000	stone	200	.....	.....	.....	16	metal	.....	11.00	950 00	21
.....	.....	.....	.....	.....	.....	.....	.....	.....	.75	200 00	22
.....	.....	.....	.....	.....	.....	.....	.....	.....	.25	50 00	23
.....	.....	.....	.....	.....	.....	1	cedar	.....	1.50	299 98	24
.....	.....	.....	.....	.....	.....	3	cedar	.....	1.50	400 00	25
120	.....	.....	.....	.....	.....	.....	.....	.....	1.50	350 00	26
.....	.....	.....	.....	.....	.....	3	metal	.....	2.00	400 00	27
.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	500 00	28
.....	.....	.....	.....	3	wood	5	wood	.....	6.00	674 42	29
.....	.....	.....	.....	.....	.....	9	cedar	.....	1.00	350 00	30
.....	.....	.....	.....	10	cedar	8	cedar	.....	2.00	400 00	31
.....	.....	.....	1	20	wood	11	wood	.....	8.00	700 00	32
.....	.....	.....	.....	.....	.....	11	metal	.....	4.00	750 00	33
.....	earth	420	.....	.....	.....	19	stone	.....	4.00	1,200 00	34
.....	.....	.....	.....	.....	.....	.....	.....	.....	1.80	450 00	35
.....	.....	.....	.....	.....	.....	.....	.....	.....	3.32	500 00	36
.....	earth	150	.....	.....	.....	.....	.....	.....	2.75	800 00	37
300	.....	.....	.....	.....	.....	10	wood	.....	10.00	675 00	38
.....	.....	.....	.....	.....	.....	3	cedar	.....	1.25	400 00	39
.....	.....	.....	.....	.....	.....	.....	.....	.....	1.51	500 00	40
.....	.....	.....	.....	.....	.....	.....	.....	.....	5.25	1,500 00	41
60	.....	.....	.....	.....	.....	4	metal	.....	1.50	298 25	42
.....	cement	225	.....	.....	.....	.....	.....	.....	3.00	1,200 00	43
.....	.....	.....	2	16	wood	14	wood	.....	10.00	699 97	44
16	stone	125	.....	.....	.....	2	metal	.....	3.00	500 00	45
.....	.....	.....	.....	.....	.....	3	wood	.....	3.00	996 22	46
.....	.....	.....	.....	.....	.....	.....	.....	.....	2.50	596 58	47
150	rock	40	.....	.....	.....	15	wood	.....	8.00	350 00	48
.....	.....	.....	.....	.....	.....	1	tile	.....	2.00	450 00	49
.....	.....	.....	.....	.....	.....	3	cedar	.....	4.00	750 00	50
.....	.....	.....	.....	.....	.....	.....	.....	.....	2.25	500 00	51
.....	.....	.....	.....	.....	.....	.....	.....	.....	4.25	1,000 00	52
.....	.....	.....	.....	.....	.....	.....	.....	.....	1.25	350 00	53
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500 00	54
2,566	.....	1,590	7	.....	.....	262	.....	.....	262.83	37,084 60	

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL
ONTARI

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	TIMISKAMING.								
1	Armstrong, from the T.N.O. west								
2	Armstrong, cons. 3-4, to Earlton								
3	Armstrong, con. 1, lots 2-3	160	40	300	24				160
4	Armstrong, cons. 2-3, lots 10-11								
5	Armstrong, con. 6, lots 2-3	240	30	240	30				
6	Armstrong, between lots 4-5								
7	Barber, between lots 2-3, Leeville	262	24	107	16				234
8	Barber and Cane, townline								
9	Barber and Tudhope, lots 1-2								
10	Brethour, cons. 4-5, lots 1-6	160	30			gravel	12	5	320
11	Brethour, cons. 5-6, lots 4, 5, 6	240	30	240	24				480
12	Brethour, cons. 5-6, lots 6-7								655
13	Brethour, T.L., lots, 2, 3, 4								60
14	Brethour and Casey, T.L., lot 4								
15	Bucke, High Falls west, con. 4								
16	Bucke, Wabi River road								6
17	Bucke, Mill Creek road								
18	Bucke, Lakeview to McDonalds								
19	Bucke, Main road south								50
20	Cane, lots 1-2, cons. 5-6								70
21	Cane, lots 4, 5, con. 5								160
22	Cane, lots 8-9, cons. 5-6	320	35	20	30				25
23	Cane, lots 6-7, from Oso								
24	Cane, cons. 5-6 ,lots 11-12	320	24						200
25	Cane, lots, 10-11, con. 4	160	30						36
26	Cane, lots 4-5, cons. 3-4								
27	Cane, between lots 4-5, con. 2	91	30	91	22				190
28	Casey, cons. 3-4, lots 1-2								320
29	Casey, Cobalt road								
30	Casey, Mine road			118	24				500
31	Casey, con. 6, lots 9-10			160	16				160
32	Casey, T.L. north between lots 4-5	240	30	80	26				160
33	Casey, lots 6-7, cons. 3-4								180
34	Casey, T.L., con. 3								640
35	Dymond, lots 6-7, con. 6								240
36	Dymond, North road, cons. 5-6								
37	Dymond, North road, con. 6								
38	Dymond, west road								210
39	Firstbrook, Main road, lots 1-4								340
40	Firstbrook, Drapo road, con. 2	324	40	320	20				
41	Firstbrook, cons. 2-3								
42	Henwood, lots 2-3, con. 4								160
43	Henwood, lots 2-3, con. 6	260	40	200	24				160
44	Henwood, cons. 2-3, lots 5-6								460
45	Henwood, lots 11-12, con. 3								
46	Henwood, lots 8-9, con. 6	100	33	100	24				200
47	Henwood, cons. 4-5, lots 7-12								
48	Henwood, cons. 5-6, lot 9	160	30	100	22				
49	Henwood, between lots 6-7, cons. 3-4.								
50	Henwood, cons. 3-4, lots 6, 7, 8								400

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES, O, 1919.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD							MILEAGE	EXPENDITURE	NUMBER
							Side-Brushed		Graded and Shaped		SURFACED					
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		$ c.	
..	..	.....	1	wood	.....	.....	.....	..	.....	..	gravel	80	8	.25	817 07	1
..	..	.....	..	.....	.....	.....	200	20	320	22	.....	.....	..	1.00	402 05	2
..	..	.....	1	wood	.....	.....	.....	..	.....	..	.....	.....	..	1.00	500 00	3
1r	..	wood	3	wood	earth	1,015	.....	..	.....	..	.....	.....	..	.50	296 70	4
2	64	wood	2	wood	earth	533	.....	..	.....	..	.....	.....	..	1.00	508 00	5
..	..	.....	..	.....	.....	.....	.....	..	300	24	gravel	194	7	1.00	408 75	6
1	16	wood	1	wood	earth	55	.....	..	.....	..	.....	.....	..	1.00	705 47	7
1	16	wood	4	wood	.....	.....	.....	..	640	24	.....	.....	..	2.00	396 14	8
..	..	.....	1	wood	earth	287	.....	..	.....	..	earth	40	8	1.00	300 50	9
..	..	.....	1	wood	.....	.....	.....	..	.....	..	.....	.....	..	1.00	501 25	10
..	..	.....	1	wood	.....	.....	.....	..	.....	..	.....	.....	..	1.00	500 00	11
..	..	.....	1	wood	.....	.....	.....	..	640	24	.....	.....	..	2.00	699 00	12
..	..	.....	1	wood	.....	.....	.....	..	.....	..	gravel	272	8	1.00	801 05	13
..	..	.....	..	.....	.....	.....	.....	..	.....	..	gravel	213	7	.70	493 07	14
..	..	.....	4	wood	earth	118	.....	..	400	24	gravel	116	7	2.00	500 00	15
..	..	.....	1	wood	earth stone	493 342	.....	..	30	24	.....	.....	..	2.00	500 00	16
..	..	.....	..	.....	.....	.....	.....	..	.....	..	stone	186	7	.75	302 93	17
..	..	.....	..	.....	.....	.....	.....	..	.....	..	gravel	75	8	.25	199 67	18
..	..	.....	..	.....	stone	20	.....	..	30	24	stone	213	7	2.00	502 12	19
..	..	.....	..	.....	.....	.....	.....	..	.....	..	gravel	107	7	.50	362 85	20
..	..	.....	..	.....	.....	.....	.....	..	.....	..	.....	.....	..	.50	397 75	21
..	..	.....	..	.....	.....	.....	.....	..	.....	..	.....	.....	..	1.00	499 87	22
..	..	.....	..	.....	.....	.....	.....	..	80	24	gravel	35	7	.25	199 00	23
..	..	.....	..	.....	.....	.....	.....	..	.....	..	.....	.....	..	1.00	602 60	24
..	..	.....	2	wood	.....	.....	.....	..	.....	..	.....	.....	..	1.00	394 00	25
..	..	.....	1	wood	.....	.....	.....	..	380	24	gravel	82	7	1.25	201 07	26
..	..	.....	1	wood	.....	.....	.....	..	.....	..	.....	.....	..	.50	300 62	27
..	..	.....	..	.....	.....	.....	.....	..	.....	..	earth	265	7	1.25	613 58	28
..	..	.....	..	.....	.....	.....	.....	..	.....	..	stone	100	..	.50	236 00	29
..	..	.....	7	wood	.....	.....	.....	..	387	24	stone	20	6	1.50	602 12	30
..	..	.....	..	.....	.....	.....	.....	..	.....	..	.....	.....	..	.50	499 18	31
..	..	.....	..	.....	.....	.....	.....	..	.....	..	.....	.....	..	.75	701 81	32
..	..	.....	1	wood	.....	.....	.....	..	120	24	gravel	160	7	1.00	900 00	33
..	..	.....	..	.....	.....	.....	320	10	.....	..	earth	140	6	1.00	400 00	34
1	33	wood	2	wood	earth	1,058	.....	..	320	22	earth	58	7	2.50	798 75	35
..	..	.....	..	.....	earth	40	.....	..	240	24	gravel	139	7	3.00	998 05	36
..	..	.....	..	.....	stone	55	.....	..	160	30	gravel	100	7	.50	747 12	37
..	..	.....	4	wood	.....	.....	.....	..	560	24	gravel	600	8	2.00	2,000 00	38
..	..	.....	9	wood	.....	.....	.....	..	480	24	gravel	173	7	2.00	1,007 40	39
2	36	wood	1	wood	earth	55	.....	..	.....	..	.....	.....	..	1.00	500 00	40
1	75	wood	2	wood	stone	55	160	15	160	24	gravel	30	7	1.50	500 00	41
..	..	.....	1	metal	.....	.....	.....	..	320	24	.....	.....	..	1.00	500 36	42
..	..	.....	..	.....	.....	.....	.....	..	.....	..	.....	.....	..	1.00	301 40	43
1	18	wood	2	wood	.....	.....	.....	..	240	22	.....	.....	..	.75	399 61	44
..	..	.....	1	wood	earth	177	.....	..	320	22	.....	.....	..	1.00	300 00	45
..	..	.....	1	wood	.....	.....	.....	..	.....	..	.....	.....	..	.50	200 35	46
..	..	.....	5	wood	.....	.....	.....	..	800	24	gravel	14	7	3.00	519 50	47
..	..	.....	1	wood	.....	.....	.....	..	.....	..	.....	.....	..	.50	299 14	48
..	..	.....	..	.....	earth	60	.....	..	360	24	.....	.....	..	2.00	400 00	49
..	..	.....	..	.....	.....	.....	.....	..	370	24	.....	.....	..	1.25	399 62	50

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	TIMISKAMING.—*Continued.*								
51	Henwood, lots 10-11, cons. 5-6								
52	Harris, lots 4-5, con. 6								340
53	Harris, T.L., lots 2-3, north								
54	Harris, lots 2-3, con. 6								110
55	Harris, cons. 5-6, lots 1-4								
56	Harris, Lake Shore road								76
57	Harris, cons. 2-3, lot 1								
58	Hudson, lots 2-3, cons. 2-3								58
59	Hudson, lots 6-7, con. 5								440
60	Hudson, cons. 3-4, lots 1-7								
61	Hudson, T.L., lot 6								
62	Hudson, lots 3-4								
63	Hudson, T.L., Kerns, lots 2, 3, 4								
64	Hudson, T.L., Kerns, lots 9-10			200	24	gravel	115	7	350
65	Harley, cons. 5-6, lots 10-12								400
66	Harley, cons. 4-5, lots 11-12								
67	Harley, lots 819, con. 5								
68	Harley, lots 4-5, con. 4								
69	Harley, between lots 2-3, con. 4	240	10						204
70	Harley, cons. 5-6, lots 4, 5, 6	160	30	160	30	gravel	80	7	
71	Harley, T.L., Casey, con. 6								420
72	Harley-Dymond, North road, west								
73	Harley-Hilliard, T.L., lots 9-11								
74	Hilliard, lots 3, 4, 5, con. 4								
75	Hilliard, lots 8-9, cons. 1-2								
76	Hilliard, lots 6-7, cons. 5-6								130
77	Hilliard, lots 4-5, con. 3	100	10	180	24				75
78	Hilliard, lots 6-7, con. 5-6								665
79	Hilliard, lots 2-3, con. 6								225
80	Hilliard, Gravel Pit road	258	25						
81	Hilliard, Armstrong T.L., cons. 1-4								
82	Hilliard, Harley, T.L., lot 2-8								15
83	Ingram T.L., lots 3-4	60	33	320	24				640
84	Kerns, cons. 3-4, lots 1, 2, 3								
85	Kerns, lots 6-7, con. 6	30	30						280
86	Kerns-Armstrong T.L., east								
87	Kerns-Armstrong T.L., T.N.O.								
88	Kerns-Harley, T.L., lots 4, 5, 6								
89	Kerns-Henwood T.L., cons. 3-6								
90	Tudhope, lots 4-5, con. 2	160	40	260	20				70
91	Tudhope, lots 2-3, con. 1			370	15				370
	Total	4,045		3,566			207		11,644

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES,
9.—*Continued.*

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD									
							Side-Brushed		Graded and Shaped		SURFACED					
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	MILEAGE	EXPENDITURE	NUMBER
..	..	.....	..	.....	.....	.....	.....	..	160	24	gravel	160	7	.50	500 00	51
..	..	.....	2	wood	rock	10	.....	..	.....	..	.....	.....	..	1.00	535 02	52
..	..	.....	..	.....	.....	.....	.....	..	.....	..	gravel	240	..	.75	700 00	53
..	..	.....	2	wood	earth	800	.....	..	370	22	.....	.....	..	2.00	834 50	54
..	..	.....	..	.....	stone	221	.....	..	.....	..	gravel	6	..	.50	301 54	55
..	..	.....	4	wood	.....	.....	.....	..	660	16	gravel	172	6	2.00	352 00	56
..	..	.....	..	.....	earth	693	.....	..	.....	..	.....	.....	..	.50	350 00	57
..	..	.....	..	.....	.....	.....	.....	..	320	24	gravel	100	6	2.00	499 70	58
..	..	.....	..	.....	gravel	120	.....	..	80	24	gravel	80	8	1.50	500 00	59
..	..	.....	..	.....	.....	.....	.....	..	.....	..	gravel	357	7	1.50	1,000 52	60
..	..	.....	..	.....	.....	.....	.....	..	.....	..	gravel	240	7	.75	404 97	61
..	..	.....	..	.....	.....	.....	.....	..	640	24	gravel	160	7	2.00	600 00	62
..	..	.....	..	.....	.....	.....	.....	..	320	24	gravel	310	6	1.00	806 30	63
..	..	.....	..	.....	.....	.....	.....	..	.....	..	.....	.....	..	.75	300 62	64
..	..	.....	..	.....	.....	.....	.....	..	160	24	.....	.....	..	1.00	302 50	65
..	..	.....	..	.....	.....	.....	.....	..	380	24	.....	.....	..	1.25	275 00	66
..	..	.....	..	.....	earth	743	.....	..	.....	..	gravel	30	7	.50	399 18	67
..	..	.....	..	.....	earth	1,031	.....	..	.....	..	.....	.....	..	.25	200 00	68
..	..	.....	..	.....	.....	.....	.....	..	.....	..	.....	.....	..	.75	300 00	69
..	..	.....	..	.....	.....	.....	.....	..	.....	..	.....	.....	..	.50	202 53	70
..	..	.....	..	.....	.....	.....	.....	..	320	26	.....	.....	..	1.00	400 07	71
..	..	.....	..	.....	.....	.....	.....	..	.....	..	gravel	240	7	.75	800 00	72
..	..	.....	..	.....	.....	.....	.....	..	.....	..	gravel	208	7	.75	500 95	73
..	..	.....	1	wood	.....	.....	.....	..	60	24	gravel	110	8	.50	401 76	74
..	..	.....	..	.....	.....	.....	.....	..	.....	..	gravel	340	7	1.50	600 00	75
..	..	.....	..	.....	gravel	148	.....	..	70	24	gravel	35	7	1.50	200 00	76
..	..	.....	1	wood	.....	.....	.....	..	.....	..	.....	.....	..	1.00	298 50	77
..	..	.....	1	wood	.....	.....	.....	..	160	24	earth	190	8	1.00	300 00	78
..	..	.....	1	wood	.....	.....	60	8	.....	..	earth	60	8	1.00	235 32	79
..	..	.....	2	wood	.....	.....	.....	..	.....	..	.....	.....	..	1.00	298 75	80
..	..	.....	1	wood	.....	.....	.....	..	.....	..	gravel	309	7	2.00	699 41	81
..	..	.....	1	wood	earth	222	.....	..	240	24	gravel	65	7	2.00	399 36	82
1	12	wood	1	.....	.....	.....	.....	..	.....	..	.....	.....	..	1.00	462 57	83
..	..	.....	..	.....	.....	.....	.....	..	.....	..	earth	400	7	1.25	800 00	84
..	..	.....	..	.....	.....	.....	.....	..	.....	..	.....	.....	..	.75	401 32	85
..	..	.....	..	.....	gravel	80	.....	..	.....	..	gravel	210	8	2.00	810 85	86
..	..	.....	..	.....	.....	.....	.....	..	.....	..	gravel	160	8	.50	599 80	87
1	16	wood	..	.....	earth	711	.....	..	.....	..	.....	.....	..	1.00	715 08	88
..	..	.....	..	.....	.....	.....	.....	..	400	24	gravel	303	7	3.00	999 00	89
..	..	.....	1	wood	.....	.....	.....	..	.....	..	.....	.....	..	.85	699 56	90
1	15	wood	1	wood	.....	.....	.....	..	.....	..	.....	.....	..	1.25	700 00	91
13	..	.....	81	.....	.....	9,142	740	..	4,760	..	.....	7,897	..	104.05	46,802 70	

SCHEDULE SHOWING THE AMOUNT OF WORK OF ROAD CONSTRUCTION,

NUMBER	TOWNSHIP	CLEARED AND STUMPED		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet
	TEMISKAMING.							
1	Brethour By-law No. 12	960	20	2,500	24	gravel	1,236	8
2	Bucke By-law No. 223	320	10	2,540	24	stone	540	8
3	Casey By-law No. 55	310	15	660	24	stone	231	8
4	Chamberlain By-law No. 60	400	20	3,226	24	gravel	305	7
5	Dymond By-law No. 185	....	....	9,180	20	gravel	402	7
6	Harris By-law No. 63	44	20	925	24	gravel	207	7
7	Hilliard By-law No. 108	145	10	3,780	24	gravel	506	7
8	Hudson By-law No. 76	....	....	770	24	gravel	30	8
9	Kerns By-law No. 166	260	10	7,900	20	gravel	853	8
	Total	2,439	....	31,481	....	.....	4,310	....

COLONIZATION ROADS BRANCH, UNDER MUNICIPAL BY-LAWS, 1919

DITCHED	CUT* OR FILL		BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER
Length, rods	Material	Amount in Cubic yards	Number	Span, feet	Material	Number	Material				
										$ c.	
706	earth	1,355	.....	.....	.....	9	wood	1.50	17.00	2,715 00	1
1,410	earth	106	1	22	wood	3	wood	.....	8.50	1,275 00	2
855	earth	20	2	16	wood	6	wood	1.00	7.00	1,039 00	3
31	clay	100	.....	.....	wood	19	wood	.50	13.00	799 97	4
1,260	earth	1,404	5	24	wood	14	wood	.....	32.00	2,018 63	5
241	rock	456	8	16	wood	.....	.....	.15	3.00	623 96	6
1,858	earth	911	3	20	wood	5	wood	.....	12.50	1,701 20	7
.....	earth	888	.....	.....	.....	3	wood	.50	3.50	600 00	8
328	earth	515	1	24	wood	17	wood	.....	28.00	1,684 27	9
6,689	.....	5,755	20	.....	.....	76	.....	3.65	124.50	12,457 03	

MISCELLANEOUS.

North Division.

Item.	Expenditure.	
1. Van Horne Township, balance	22 00	
2. Ware Township, balance	101 00	
3. Phillips & Benner, survey	205 97	
4. Jas. Fraser, culverts	29 50	
5. Storage of tools	75 00	
6. Luke Waker, compensation for injuries, Dryden road	150 50	
7. Inspection, 1919	5,204 57	
		$5,788 54

West Division.

8. Juddhaven road, balance, 1918	$50 00	
9. Carling Township roads, balance, 1918	91 08	
10. C. H. Meader, survey and location expenses, Bracebridge-Baysville and Chisholm Township road	36 00	
11. Bury road, balance, 1918	29 40	
12. Lawrence Masters, compensation for injuries, Bethune Township road	29 70	
13. Jno. W. Sanders, Compensation for injuries on the Bracebridge-Baysville road	20 62	
14. Inspection, 1919	2,271 80	
		$2,528 60

East Division.

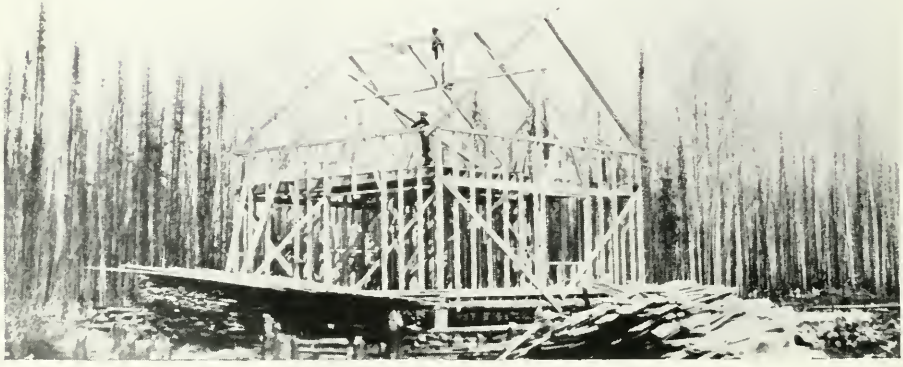
15. W. W. Pringle, Addington road, balance, 1918	$50 10	
16. August Blenkie, Addington and Palmer Rapids road, balance, 1918	25 65	
17. J. Beatty, Kaladar and Tweed, balance, 1918	21 50	
18. Wm. Hughes, storage of tools, Addington road, balance, 1918	11 85	
19. Grant to Storrington Township, 1918	300 00	
20. L'Amable Station road, gravel	100 00	
21. Long Lake Cemetery hill, cedar	294 00	
22. Jas. Douglas, compensation for injuries, Carlow road	42 96	
23. P. Rochefort, railway fares, balance, 1918	53 80	
24. H. N. Moss, board account	14 00	
25. A. J. Southern, inspection	114 30	
26. P. Rochefort, Chisholm road inspection	26 00	
27. One McLaughlin motor car	1,414 85	
28. Feronia road, balance	33 00	
29. Charleston Lake road, R. E. Cornell	25 00	
30. Inspection, 1919	7,498 15	
		$10,025 16

Temiskaming.

31. Harley road, balance, Allan Ludlow	50 00	
32. W. E. Kerr, storage of tools	72 00	
33. E. Frisby, Diamond Township, balance, 1917	274 62	
34. Frank Leslie, balance, Temiskaming road	15 63	
35. Inspection, 1919	1,040 05	
		$1,452 30
		$19,794 60

No.	RECAPITULATION	Cleared and stumped	Graded and shaped	Surfaced	Ditched	Cut and fill	Bridges	Culverts	New Road	Old Road	EXPENDITURE	No.
		rods	rods	rods	rods	cu. yds.	number	number	miles	miles	$ c.	
1	North Division, Direct Grants..	23,997	41,713	27,388	15,779	20,113	51	409	40.00	176.95	78,300 85	1
2	North Division, By-laws.....	11,308	49,784	39,635	21,575	8,057	23	344	19.06	253.13	50,397 02	2
3	West Division, Direct Grants..	8,870	20,632	17,923	1,611	11,654	9	192	12.65	75.00	40,745 06	3
4	West Division, By-laws.....	9,267	30,371	18,498	640	3,936	13	180	1.92	163.45	16,938 65	4
5	East Division, Direct Grants ..	15,801	55,734	40,203	2,311	11,615	75	380	21.81	224.00	88,101 03	5
6	East Division, By-laws.....	8,272	46,281	34,892	2,566	1,590	7	262	.....	262.83	37,084 60	6
7	Temiskaming, Direct Grants..	4,785	8,326	8,104	11,644	9,142	13	81	12.65	91.40	46,802 70	7
8	Temiskaming, By-laws	2,439	31,481	4,310	6,689	5,755	20	76	3.65	124.50	12,457 03	8
9	Miscellaneous (4 Divisions)....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,794 60	9
	Total.....	84,739	284,322	190,953	62,815	71,862	211	1,924	111.74	1,371.26	390,621 54	

Steel bridge at Kapuskasing: erected 1919.



Building a home in the North.

Appendix No. 43.

The Honourable the Minister of Lands, Forests and Mines, Ontario.

SIR,—I have the honour to submit to you the report of the work of the Northern Development Branch, done under my supervision during the season ending October 31st, 1919, in Temiskaming District and that part of Algoma District in the vicinity of the Town of Hearst, being otherwise described as: (1) the area tributary to the Temiskaming and Northern Ontario Railway and its branches from Latchford to its Northern terminus at Cochrane, a distance of almost one hundred and sixty miles, and (2) the area tributary to the Canadian National Railways from the Quebec boundary westward, for a distance of about two hundred miles.

On account of the scattered settlements in Northern Ontario, the problem of providing good roads for all is very difficult and costly, particularly so when

Scene at Swastika, Ont.

wages are high and labor is scarce. In many cases it is a question of having a bad road or of having no road at all, so that we have, in order to serve the different isolated settlements, many miles of road varying in quality from very good to very bad, much of it often impassable at certain seasons of the year. With more compact settlements the same expenditure would have constructed better and more satisfactory roads on account of less mileage required.

No new roads were cut out in advance of settlement during the past season. This class of work was only done in order to let settlers out and give their children access to school. The principal work done was towards the completing of roads that had been commenced, and the repairing and improving of existing roads. Considerable gravelling was done during the winter in the neighborhood of Matheson, Monteith and Cochrane. It was found to be more cheaply done in winter and provided work for settlers during a slack time.

The details of most of the work done are shown in the accompanying schedule in tabulated form. In addition to what is shown on this schedule, a steel bridge

was erected over the Kapuskasing River in O'Brien Township, and the sub-structure for another over the Mattagami River, near Timmins, has been almost completed. Erection of the steel will probably be completed during the month of January.

Besides constructing roads and bridges for settlers, considerable attention was paid to the wants of the mining population. A railroad from Swastika to Kirkland Lake Mining Camp had been projected, but on the representation of the people interested and to avoid the heavy expenditure entailed, it was decided to undertake the construction of a water bound macadam road.

Road in Temiskaming.

The construction of a similar road from Elk Lake to Gowganda was undertaken in lieu of the railroad that had been urgently requested. It was estimated that it would cost three-fourths less to construct, and that it would answer all requirements.

Considerable progress was made on both of these roads under most trying labor and weather conditions. Several months' work, with more favorable conditions, will probably see the completion of the former road, but it will require

several seasons to complete the road to Gowganda without considerable expenditure upon additional plant and equipment.

In conclusion, I have to say that all our road work could be carried on more efficiently if our organization included more technically trained and experienced road makers. Modern road building is an occupation by itself and too much responsibility should not be allowed to rest on the shoulders of the local handy man who has not had the training and experience necessary to do the best work.

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

C. H. FULLERTON,
Director, Northern Development Branch,
Temiskaming District.

Toronto, October 31st, A.D. 1919.

The Honourable the Minister of Lands, Forests and Mines, Ontario.

SIR,—Under the provisions of the Act of 1912, and subsequent amendments, for the development of Northern and North-Western Ontario, I recommend for the construction, maintenance and repairs of roads and bridges the following expenditures, for the season ending October 31st, 1920.

(A) In the territory served by the Temiskaming and Northern Railway from Latchford to Cochrane.

(1) From Latchford to Swastika, including the Elk Lake and Charlton branches of the railway and mining camps of Boston Creek, Kirkland Lake and Larder Lake	$100,000
(2) From Swastika to Monteith	75,000
(3) From Monteith to Cochrane, including the Iroquois Falls Branch and Porcupine branch of the Railway as far as Porcupine River.	75,000
(4) The Porcupine Mining District, including Mountjoy Township	50,000

(B) In the territory served by the Canadian National Railways, from the Quebec boundary to Grant, and southerly along the Algoma Central Railway to Oba.

(1) From the Quebec boundary, west to Fauquier, including roads for Soldiers' and Sailors' Colony in Shackleton Township	75,000
(2) From Fauquier to Grant, including roads for Soldiers' and Sailors' Settlement in O'Brien and Owens Townships	75,000
Unforeseen expenditures	50,000
	$525,000

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

C. H. FULLERTON,
Director, Northern Development Branch,
Temiskaming District.

Toronto, October 31st, 1919.

DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN DEVELOP

COCHRANE

Number	Township	Location (On line between..... from.....to .....)	Cutting L.&W. Ch. Ft.	Burning L.& W. Ch. Ft.	Stumping L. & W. Ch. Ft.	Grubbing L. & W. Ch. Ft.	Grading L & W. Ch. Ft.
1	Brower	Bet. III & IV across 1 & 2.	14x10 80x66	14x10	14x10	14x10	..... 80x24
2	do	Bet. 2 & 3 across II to VI. inclusive.....	120x66	.....	.....	.....	114x24
3	do	Bet. IV & V across 1, 2 & 3.	40x66	.....	.....	.....	60x24
4	do	Bet. II & III " 1, 2 & 3	5x66	.....	5x24	5x24	33x24
5	do	Bet. III & IV " 11 & 12 ..	.....	.....	.....	.....	.....
6	do	Bet. 10 & 11 " V & VI ..	.....	.....	.....	.....	4x30
7	Calder.....	Bet. VIII & IX " 19 to 28 inclusive.....	.....	.....	101x30	101x30	.....
8	do	Bet. X & XI across 13 to 16 inclusive.....	.....	.....	$87\frac{3}{4}$x30	$87\frac{3}{4}$x30	.....
9	do	Bet. VIII & IX across 1, 2&3	.....	.....	$50\frac{1}{2}$x30 $25\frac{1}{4}$x24	$50\frac{1}{2}$x30 $25\frac{1}{4}$x24	....
10	do	Bet. VIII & IX " 4 & 5.	.....	.....	$25\frac{1}{4}$x30 $25\frac{1}{4}$x24	$25\frac{1}{4}$x30 $25\frac{1}{4}$x24	....
11	do	Bet. II & III " 1, 2 & 3	.....	.....	$50\frac{1}{2}$x24	$50\frac{1}{2}$x24	.....
12	Calvert.....	Trunk road Porquis Jct. to Iroquois Falls	80x20 51x16	.....	.....	.....	.....
13	do	Trunk road Porquis Jct. to Nellie Lake.....	.....	.....	.....	.....	.....
14	do	Bet. IV and V across 1, 2 & 3	.....	.....	.....	.....	58x30
15	do	Bet. I & II across 9.....	.....	.....	40x33	40x33	.....
16	do	Bet. IV and V across 1 & 2 (part)	.....	.....	.....	10x30	5x30
17	Clergue.....	Trunk road Porquis Jct. to Monteith.....	.....	.....	.....	.....	330x24
18	do	Bet. 6 & 7 across II to V inclusive	80x66	.....	.....	80x24	100x24
19	do	Bet. III & IV across 5, 6 & 7	.....	.....	.....	.....	.....
20	do	Bet. II & III across 6.....	40x66	.....	$4\frac{1}{2}$x33	$4\frac{1}{2}$x33	.....
21	do	Bet. II & III across 2, 3 & 4	.....	.....	79x33	79x33	.....
22	do	Bet. IV & V across 1, 2 & 6	120x66	.....	.....	.....	.....
23	do	Bet. IV & V across 1 to 6 inclusive	.....	.....	80x30 80x24	80x30 80x24	..... 126x24
24	do	Bet. V & VI across 11 & 12	.....	.....	33x24	33x24	.....
25	Clute	Bet. VI & VII across 28....	.....	.....	.....	.....	7x30
26	do	Bet. IV & V across 26,27&28	.....	.....	.....	$38\frac{1}{4}$x33	.....
27	do	Bet. X & XI across parts 27 & 28	.....	.....	.....	.....	.....
28	do	Bet. VIII & IX across 26, 27 & 28.....	.....	.....	.....	.....	.....
29	do	Bet. X & XI across 28 and along boundary bet. Clute and Calder across Con. X	.....	.....	.....	18x30 11x15	.....
30	do	Bet. 18 & 19 across V.....	.....	.....	.....	$60\frac{1}{4}$x33	.....
31	Fox	Bet. II & III across 7 to 12 inclusive.....	15x66	.....	$27\frac{1}{2}$x24	$27\frac{1}{2}$x24	.....
32	German	Between 11 & 12 across V & VI	92x66 1x66	..... 92x66	68x24 6x24	..... 6x24	.....

MENT BRANCH—ANNUAL RFPORT OF WORK DONE. YEAR 1919

DISTRICT

Gravelling L. & W. Ch. Ft.	Side-Ditching Ft. Linl.	Off-take Ditching L.&W.&D Ft. Ft. Ft.	Culverts No.	Culverts Wood Concrete Iron	Culverts Size Ft.	Bridges No.	Bridges Wood Conc. Iron	Bridges Len'th Ft.	Corduroy L.&W. Ch. Ft.	Repairs Distance Ch.	Number
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1
.....	2,244	198x2x2	22	wood	3x3	1	wood	150	.....	175 *	2
						1	wood	50	.....	.....	
						1	wood	100	.....	.....	
.....	2,244	462x3x2	3	wood	3x2	.....	.....	.....	.....	42 †	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	1,900	.....	.....	.....	.....	.....	.....	.....	.....	14	5
.....	132	.....	6	wood	3x2	.....	.....	.....	.....	.....	6
.....	.....	3,320x3x2	.....	.....	.....	.....	.....	.....	.....	.....	7
.....	19,982	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
.....	12,754	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
.....	1,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10
.....	1,300	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	2,772	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
310x8	3,366	.....	7	wood	4x3	.....	.....	.....	.....	400	12
23x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13
.....	792	.....	8	wood	3x2	.....	.....	.....	.....	.....	14
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
.....	.....	.....	1	wood	3x2	.....	.....	.....	.....	.....	16
.....	2,640	.....	27	wood	3x2	2	wood	Reprd.	.....	230	17
						1	wood	40			
.....	.....	1980x3x2	6	wood	3x3	.....	.....	.....	.....	240	18
.....	5,280	.....	3	"	3x2	.....	.....	.....	.....	60	19
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	750	.....	.....	.....	.....	.....	.....	.....	.....	.....	24
.....	2,476	.....	2	wood	3x2	.....	.....	.....	.....	.....	25
.....	4,450	715x3x2	.....	.....	.....	.....	.....	.....	.....	.....	26
.....	987	30x2x2	4	wood	4x3	.....	.....	.....	.....	.....	27
.....	5,726	822x3x2	.....	.....	.....	.....	.....	.....	.....	.....	28
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29
	3,504	192x3x2									
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
.....	1,300	.....	.....	.....	.....	.....	.....	.....	.....	.....	31
.....	.....	.....	3	wood	3x2	.....	.....	.....	.....	.....	32

* 290 ch. x 24 ft. re-graded. † 20 ch. x 24 ft. re-graded.

DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN

YEAR 1919.

COCHRANE

Number	Township	Location (On line between ..... from..... to.....)	Cutting L. & W. Ch. Ft.	Burning L. & W. Ch. Ft.	Stumping L. & W. Ch. Ft.	Grubbing L. & W. Ch. Ft.	Grading L. & W. Ch. Ft.
33	Glackmeyer.....	Bet. VI & VII across 12	.....	.....	.....	.....	.....
34	do	Bet. IV & V across 15	.....	.....	.....	.....	.....
35	do	Bet. 18 & 19 across II to IX	.....	.....	.....	.....	.....
36	do	Bet. 12 & 13 across I & II..	.....	.....	.....	.....	.....
37	do	Bet. 24 & 25 across VII&VIII	127x66	.....	.....	.....	.....
38	Lamarche	Bet. 6 & 7 across V.....	.....	.....	.....	.....	.....
39	do	Bet. 8 & 9 across V & VI...	.....	.....	.....	.....	.....
40	do	Bet. V & VI across 7 & 8...	.....	.....	.....	.....	.....
41	Leitch.....	Bet. IV & V across 1, 2 & 3.	.....	.....	.....	.....	.....
42	do	Bet. IV & V across 2	.....	25¼x33	.....	.....	.....
43	McCart	Bet. I & II across 1 to 5 inclusive	58x66	58x66	58x33	58x33	.....
44	do	Bet. II & III across 1 & 2..	.....	.....	30x30	30x30	.....
					20x15	20x15	.....
					10x7½	10x7½	.....
45	do	Bet. I & II across 1 to 4 inclusive	81x66	40x66	62x33	62x33	.....
46	Shackleton.....	From Post Office to Fauquier Station	.....	.....	.....	.....	.....
47	do	Trunk road along C.N. Ry..	Scow installed at crossing Groundhog River				
48	Blount & Glackmeyer.....	Boundary Lines. In lots 19 & 23.....	.....	.....	.....	.....	.....
49	Brower & Fox....	Across Cons. I & II.....	.....	.....	.....	.....	14x30
50	Brower & Kennedy	" Lots 25, 26 & 27....	Ferry over Abitibi River repaired				
51	Calvert & Clergue.	" Lots 1 & 2.....	.....	.....	.....	.....	.....
52	Calder & Ottoway	" Lots 1 & 2.....	.....	.....	20x30	20x30	20x30
53	Clute & Calder....	" Cons. I to XI inclusive	.....	.....	.....	.....	149x30
54	Clute & Fournier..	" part of lots 14 & 17.	.....	.....	.....	.....	.....
55	do ..	" Lots 9, 10 & 11.....	.....	.....	.....	.....	.....
56	Clute&Glackmeyer	" Cons. X, XI & XII..	.....	.....	.....	.....	160x30
57	Lamarche & Glackmeyer.....	Across Lot 28	.....	.....	.....	.....	.....
58	Lamarche & Fournier.....	Across Con. VI	.....	.....	.....	.....	110x30
59	Lamarche & Glack. meyer.....	Across Lots 1 to 5 inclusive	.....	.....	.....	.....	10x30
60	McCart & Calvert and Newmarket.	Across Con. VI and along T. & N.O. Ry. 231.5 to 233..	49x66	49x66	49x33	49x33	.....
		Town of Cochrane, 12th Ave.	.....	.....	.....	.....	.....

ENGLEHART

1	Armstrong	Bet. 4 & 5, across V	80x66	.....	.....	.....	.....
2	Barr	Portage at mouth of Mattawapika River.....	25x15	25x15	25x15	25x15	25x15
3	Chamberlain.....	Between 10 & 11 across V.	.....	.....	40x24	.....	160x20
4	do	Bet. 10 & 11 across 5 to 10. inclusive.....	80x66	.....	120x24	120x24	160x24
5	do	Bet. 8 & 9 across IV.....	40x66	40x66	.....	.....	.....

DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE,

Continued.

DISTRICT—Concluded

Gravelling L. & W. Ch. Ft.	Side-Ditching Ft. Linl.	Offtake Ditching L.&W.&D. Ft.	Culverts No.	Wood Concrete Iron	Size Ft.	Bridges No.	Wood Conc. Iron	Len'th Ft.	Corduroy L. & W. Ch. Ft.	Repairs Distance Ch.	Number
.....	.....	.....	1	wood	.....	1	wood	85	.....	.....	33
.....	.....	.....	.....	.....	.....	1	wood	40	.....	.....	34
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	35
.....	.....	.....	1	wood	3x3	1	wood	Reprd	.....	.....	36
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	37
10x8	.....	.....	2	.....	.....	2	wood	Reprd	.....	.....	38
59x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	83	39
23x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
.....	950	.....	.....	.....	.....	.....	.....	.....	.....	.....	41
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	42
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	43
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	9,840	656x3x2	.....	.....	.....	.....	.....	.....	.....	.....	44
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45
.....	594	.....	.....	.....	.....	.....	.....	.....	.....	9	46
											47
.....	.....	.....	.....	.....	.....	1	wood	Reprd	.....	.....	48
						1	wood	16			
.....	.....	.....	2	wood	3x2	1	wood	16	.....	20	49
.....	3,366	.....	4	wood	3x2	.....	.....	.....	.....	50	50
73x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52
.....	11,550	.....	44	wood	3x3	1	wood	100	.....	.....	53
.....	840	.....	.....	.....	.....	.....	.....	.....	.....	.....	54
.....	5,544	3300x4x3	4	wood	3x3	.....	.....	.....	.....	240	55
.....	2,112	.....	9	wood	3x2	1	wood	40	.....	60	56
54x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57
157x8	3,630	.....	1	wood	4x3	1	wood	Repd	.....	.....	58
						1	wood	40			
.....	198	132x6x8	3	wood	3x3	1	wood	40	.....	.....	59
.....	11,738	196x4x2	.....	.....	.....	.....	.....	.....	.....	.....	60
9x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

DISTRICT

.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
25x15	Ties laid and 12 lb. rails and at each end of tramway a dock was built of hewn timber										2
.....	.....	600x3x2	5	wood	3x2	1	piles	20	.....	.....	3
						1	only	24			
100x10	.....	600x3x2	1	wood	5x5	.....	.....	.....	.....	.....	4
			1	wood	3x3						
			8	wood	3x2						
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5

DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN

YEAR 1919.

ENGLEHART

Number	Township	Location (On line between..... from.....to .....)	Cutting L.&W. Ch. Ft.	Burning L. & W. Ch. Ft.	Stumping L. & W. Ch. Ft.	Grubbing L. & W. Ch. Ft.	Grading L.& W. Ch. Ft.
6	Chamberlain....	Bet. 6 & 7 " IV.....	40x66	40x66	.....	.....	.....
7	do	Bet. III & IV " 8 & 9	.....	.....	.....	.....	.....
8	Dack	Bet. V & VI " 1 & 2	.....	.....	.....	.....	80x20
9	do	Bet. 8 & 9 " II.....	.....	.....	.....	.....	.....
10	do	Across Lot 4, Con. IV.....	.....	.....	.....	.....	.....
11	do	Bet. 7 & 8 across IV.....	.....	.....	.....	.....	.....
12	do	Bet. V & VI " V & VI....	.....	.....	.....	.....	.....
13	do	Bet. 6 & 7 " VI.....	40x66	40x66	80x30	80x24	30x20
14	do	On Lot 1, Cons. III & IV....	(High Fa	lls Hill)	.....	.....	.....
15	do	Bet. 8 & 9 across IV.....	40x66	40x66	40x24	40x24	40x20
16	do	Bet. 4 & 5 " III and					
17	do	Bet. III & IV " 5 & 6.....	.....	.....	120x24	120x24	40x20
18	do	Across Lot 3, Con. VI.....	.....	.....	40x30	40x24	40x20
19	Evanturel	Bet. V & VI on Lot 10	.....	.....	.....	.....	.....
20	do	Bet. 2 & 3 across VI	.....	.....	40x24	40x20	40x20
21	do	Bet. II & III " 7 & 8....	.....	.....	.....	.....	80x20
22	do	Bet. 8 & 9 " V.....	.....	.....	.....	.....	80x24
23	do	Bet. IV & V " 8 & 9....	.....	.....	.....	.....	80x24
24	do	Across 1.2.3 & 4 on Con. III	.....	.....	.....	.....	.....
25	do	Bet. II & III across Lot 2..	40x66	40x66	40x24	40x24	40x20
26	Ingram	Across Lot 12 Con. III.....	.....	.....	.....	.....	.....
27	do	Bet. 6 & 7 across II.....	.....	.....	.....	.....	.....
28	Lorrain.....	North Cobalt to Bigelow P.O.	.....	.....	.....	.....	240x20
29	do	On Con. II across 12 to 15 inclusive	160x66	.....	.....	.....	.....
30	do	Bet. 4 & 5 across XI	56½x66	56½x66	.....	.....	.....
31	Marter	Bet. III & IV " 6 to 12 inclusive	200x66	.....	200x24	200x24	320x20
32	do	.....	.....	.....	.....	.....	.....
33	do	.....	.....	.....	.....	.....	.....
34	do	.....	.....	.....	.....	.....	.....
35	do	.....	.....	.....	.....	.....	.....
36	do	.....	.....	.....	.....	.....	.....
37	do	On Lot 5 Con. I	.....	.....	.....	.....	.....
38	do	Bet I & II across 10	40x66	40x66	40x24	.....	40x20
39	Marquis	On Con. V across 1 to 7 inclusive		Road un	finished		
40	do	Bet. IV & V across 4 & 5..	100x66	.....	.....	.....	.....
41	do	Bet. V & VI " 8,9 & 10	135x66	.....	.....	.....	.....
42	Otto.....	On North side Lot 3, Con. V	.....	.....	23x24	.....	.....
43	do	Bet. 2 & 3 across V.....	.....	.....	23x24	.....	.....
44	do	Bet. IV & V across 2.....	40x66	.....	.....	.....	.....
45	Pacaud.....	Bet. I & II across 5 & 6....	.....	.....	40x30	40x30	40x20
46	do	Bet. II & III " 3 & Bet. 2 & 3 across III	80x66	80x66	.....	.....	.....
47	do	Bet. 10 & 11 across VI	50x66	.....	.....	.....	.....
48	Robillard.....	Bet. 8 & 9 across V.....	40x66	.....	40x24	.....	.....
49	do	Bet, 8 & 9 " IV.....	80x66	80x66	.....	.....	.....
50	Sharp	Bet. I & II " 1.....	40x66	40x66	.....	.....	.....
51	do	Bet. IV & V " I, 2 & 3 & Bet. 2 & 3 " V.....	60x66	160x66	160x24	160x24	160x20
52	Lee&VanOstrand	White Reserve Road	.....	.....	.....	.....	.....

DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE.

Continued.

DISTRICT—Continued

Gravelling L. & W. Ch. Ft.	Side-Ditching Ft. Linl.	Off-take Ditching L.&W.& D Ft. Ft. Ft.	Culverts No.	Culverts Wood Concrete Iron	Culverts Size Ft.	Bridges No.	Bridges Wood Conc. Iron	Bridges Len'th Ft.	Corduroy L. & W. Ch. Ft.	Repairs Distance Ch.	Number
											6
			2	wood	3x2						7
		3480x3x2							5x10		8
										80	9
		1520x3x2									10
			1	wood	6x8						11
			2	wood	3x2						12
		330x3x2	6	wood	3x2						13
										40	14
			3	wood	3x2						15
											16
		165x3x2	3	wood	3x2						17
			2	wood	3x4						
			1	wood	4x3						18
						1	Reprd				19
2½x10		225x3x2	4	wood	3x2				2½x10		20
											21
											22
											23
		10510x3x2									24
			2	wood	3x2						25
		1520x3x2									26
		3300x3x2									27
		2100x3x2	17	wood	3x2					10 miles	28
											29
											30
9x10		1845x3x2	11	wood	3x2	1	wood	214′			31
			3	wood	3x3	2	wood	16′			32
			1	wood	8x9	1	wood	20			33
			1	wood	6x8						34
			1	wood	6x10						35
			1	wood	3x5						36
			1	wood	5x9	(rebuilt)					37
		200x3x2	3	wood	2x3						38
			2	wood	3x4						
											39
											40
											41
		2410x3x2	7	wood	3x2						42
	46 chains (cleaned)	600x3x2	5	wood	3x2						43
						1	re-cov.				44
		250x3x2	3	wood	3x2						45
											46
											47
											48
											49
											50
		1300x3x2	5	wood	3x2						51
										2 miles	52

DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN

YEAR 1919.

ENGLEHART

Number	Township	Location (On line between..... from..... to.....)	Cutting L.&W. Ch.Ft.	Burning L.&W. Ch.Ft.	Stumping L.&W. Ch. Ft.	Grubbing L.&W. Ch. Ft.	Grading L.&W. Ch. Ft.
53	Boston, Gauthier & McElroy....	Larder Lake and Huronia Roads.....	.....	.....	.....	.....	240x24
		BOUNDARY LINES					
54	Armstrong and Beauchamp...	Boundary across IV & V...	.....	.....	.....	.....	160x24
55	Armstrong and Beauchamp...	Boundary across V.....	40x66	40x66	40x24	40x24	40x20
56	Chamberlain and Marter.....	Boundary across 1 & 2.....	.....	.....	.....	.....	.....
57	do	" " 11	.....	.....	.....	.....	.....
58	do	" on Con. II.....	.....	.....	.....	.....	.....
59	Chamberland and Pacaud.....	Boundary across 7,8,9,10&11	.....	.....	.....	.....	.....
60	Dack & Be'champ	Boundary " 1 & 2.....	80x66	80x66	80x24	80x24	80x20
61	Dack & Evanturel	Boundary " VI.....	.....	.....	.....	.....	80x20

HEARST

1	Casgrain	Bet. 24 & 25 across pts. II & III	.....	.....	.....	.....	.....
2	do	Bet. II & III " " 15, 16 & 17	.....	.....	.....	.....	60x22
3	do	Bet. 18 & 19 across I, II & III	.....	.....	.....	.....	11x22
4	do	Bet. 24 & 25 " IV, V & VI	.....	160x24	.....	160x24	.....
5	Hanlan	Trunk Road across pts 23 to 28 inclusive.....	.....	.....	.....	.....	140x24
6	do	Bet. II & III across 16, 17 & 18	74x66	.....	.....	74x24	.....
7	Kendall.....	Trunk Road East of Hearst	.....	.....	.....	.....	.....
8	do	Bet. 18 & 19 across pt. XII.	.....	.....	.....	.....	.....
9	do	Bet. 24 & 25 " X	.....	.....	.....	.....	120x22
10	do	Bet. 24 & 25 " pt. IX..	.....	.....	.....	.....	.....
11	do	Bet. VI & VII " 27,28&29	80x66	.....	.....	80x24	.....
12	do	Bet. V & VI across 27,28&29	76x66	.....	.....	.....	.....
13	do	Bet. 12 & 13 " VIII	.....	.....	.....	.....	.....
14	do	Bet. 18&19 " IX & pt. X	.....	94x24	.....	94x33	.....
15	do	Bet. VIII & IX across 29...	.....	.....	.....	.....	.....
16	O'Brien.....	Trunk Road along C.N. Ry.	400' rock approaches to bridges average 4ft				40x22
17	do	Bet. 22 & 23 across XI & XII	.....	.....	.....	.....	40x20
18	do	Bet. 10 & 11	.....	.....	.....	.....	27x20
19	do	Bet. 24 & 25 across 9 & 10.	.....	.....	.....	.....	20x20
20	do	Bet. VIII & IX across 25&26	.....	.....	.....	35x33	27x22
21	do	Bet. XIV & XV " 19 & 20.	.....	.....	.....	.....	.....
22	do	Bet. X & XI " pt. 25 to 29 inclusive.....	95x66	96x66	.....	95x24	.....

DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE.

Continued.

DISTRICT—Concluded

Gravelling L.&W. Ch Ft.	Side Ditching Ft. Linl.	Off-take Ditching L.&W&D. Ft. Ft. Ft.	Culverts No.	Culverts Wood Concrete Iron	Culverts Size Ft.	Bridges No.	Bridges Wood Conc. Iron	Bridges Len'th Ft.	Corduroy L. & W. Ch. Ft.	Repairs (Distance) Ch.	Number
.....	600	1000x3x2	4	wood	3x3	.....	.....	.....	.....	.....	53
			4	wood	3x2	1	recons	tructed	45x10	9 miles	
			30	wood repaired	3x2				.. ..		
.....	Old trestle	s removed	9	wood	3x2	.....	.....	.....	.....	.....	54
			1	wood	3x2						
			2	wood	5x3½						
			1	wood	5x4						
			1	wood	5x4						
			2	wood	2x1½						
			1	wood	5x3						
.....	.....	.....	.....	.....	.....	.....	.....	.....	... ...	.....	55
66x6	.....	615x3x3	.....	.....	.....	.....	.....	.....	.....	.....	56
	Old trestle	removed	1	wood	6x8	.....	.....	.....	.....	.....	57
64x66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	58
.....	.....	.....	.....	.....	.....	... ..	.....	.....	.....	2½miles	59
.....	.....	130x3x2	1	wood	5x3	.....	.....	.....	.....	.....	60
			3	wood	3x2						
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61

DISTRICT

60x10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	.....	200x10x4	3	Temp.	.....	.....	.....	.....	.....	.....	2
.....	18400	1600x4x4	3	Temp.	.....	.....	.....	.....	... ...	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	9900	900x4x4	6	Temp.	.....	.....	.....	.....	.....	.....	5
		50x4x3									
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1½ miles	7
.....	1400	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
.....	.....	200x4x3	3	Temp.	.....	5	wood	16	.....	.....	9
.....	3600	100x4x4	.....	.....	.....	.....	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
.....	3400	.....	.....	.....	.....	.....	.....	.....	.....	.....	13
.....	12400	200x4x4	.....	.....	.....	.....	.....	.....	.....	.....	14
.....	2080	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
.....	10460	7½x4x3	3	wood	4x4	2	steel	120			
								80	.....	4½ miles	16
						1	wood	33			
.....	5280	6x4x3	5	Temp.	... ..	.....	.....	.....	.....	.....	17
.....	1550	9x4x3	6	wood	4x4	.....	.....	.....	.....	.....	18
.....	9400	18x4x4	4	Temp.	.....	.....	.....	.....	.....	.....	19
			2	wood	10x16						
.....	3200	1x4x3	3	Temp.	.....	.....	.....	.....	.....	.....	20
			2	wood	12x16						
.....	1800	3x4x3	3	Temp.	.....	.....	.....	.....	.....	.....	21
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22

DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN

YEAR 1919.

HEARST

Number	Township	Location (On line between..... from..... to.....)	Cutting L & W. Ch. Ft.	Burning L. & W. Ch. Ft.	Stumping L.&W. Ch. Ft.	Grubbing L.&W. Ch. Ft.	Grading L. & W. Ch. Ft.
23	O'Brien	Bet. X & XI across pt. 25 to 29 inclusive, and line bet' O'Brien and Owens.....	.....	.....	.....	.....	.....
24	do	Bet. VII & IX across 19 to 24 inc. and bet. 18 & 19 across IX	.....	.....	.....	.....	.....
25	do	Bet. 18 & 19 across IX & pt. X	.....	.....	.....	45½x24	.....
26	do	Bet. 7 & 8 across pt. X	26x66	26x66	.....	26x33	.....
27	Owens.....	Trunk Road across 1,2,3 & 4	.....	.....	.....	40x22	.....
28	do	Bet. 24 & 25 across XV to XVIII inclusive	.....	.....	.....	.....	80x22
29	do	Bet. XVI & XVII across pt. 24	15x66	15x66	.....	15x24	15x22
30	do	Bet. XIV & XV across 24 & 25	.....	.....	.....	.....	.....
31	Shackleton	Trunk road across Townsite	45x66	59x66	.....	59x30	73x24
32	do	Trunk " pts. 21, 22 & 23	.....	.....	.....	.....	45x24
33	do	Bet. 24 & 25 across pts. XI & XII.....	61x66	61x66	.....	61x24	23x24
34	Way.....	Trunk road across 13 to 17 inclusive.....	.....	25x30	.....	123x30	.....
35	do	Trunk Road across 20 at milage 45 C.N. Ry	.....	.....	.....	25x30	.....
36	do	Bet. X & XI across 5 to 8 inclusive.....	.....	.....	.....	.....	60x22
37	do	Bet. VIII & IX across 1. 2. 3. 4. 5 & pt. 6.....	129x66	.....	.....	129x24	.....
38	do and Hanlan	Trunk Road across 1 to 16 inclusive.....	.....	.....	.....	.....	.....
39	do	Bet. II & III across 3, 4 & 5	74x66	.....	.....	.....	.....
40	do	Bet. II & III " I & 2..	49x66	.....	.....	.....	.....
41	do	Bet. X & XI " pt. 8 ..	.....	.....	.....	.....	.....
42	do	Bet X & XI " pts. 7 & 8	.....	.....	.....	.....	.....
43	Williamson	Bet. 24 & 25 " I.....	.....	.....	.....	.....	60x22
		BOUNDARY LINES					
44	Hanlan & Way..	Diversion at Lake Lot 1 & pt. 2	.....	.....	.....	.....	80x22
45	do ..	Across pt. lot 5.....	.....	.....	.....	.....	.....
46	do ..	" 6 & 7	.....	.....	.....	35x24	.....
47	Kendall & Way .	" V & VI	120x66	.....	.....	.....	.....
48	Lowther & Way.	" 9, 10 & 11	73x66	.....	.....	.....	.....
49	O'Brien & Owens	" XII, XIII & XIV...	.....	.....	.....	.....	40x22
50	do do	" XI	40x66	40x66	.....	40x24	.....
51	Owens & Williams	on " 25 & 26.....	.....	.....	.....	.....	26x22

MATHESON

1	Beatty.....	Bet. II & III across pt. 5. 6 & pt. 7	.....	87x66	87x33	87x33	.....
2	do	Bet. 11 & 12 across II.....	80x66	80x66	80x33	80x33	.....
3	do	Bet. " " I.....	.....	80x33	80x33	80x33	.....
4	do	Bet. 9 & 10 " II.....	80x66	80x66	80x33	80x33	.....
5	do	Bet. 9 & 10 " III.....	80x66	80x66	80x33	80x33	.....
6	Benoit	Bet. I & II " 4 to 8 inclusive	.....	.....	.....	.....	.....

DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE.

Continued.

DISTRICT—Concluded

Gravelling L. & W. Ch. Ft.	Side-Ditching Ft. Linl.	Off-take Ditching L & W & D. Ft. Ft. Ft.	Culverts No.	Culverts Wood Concrete Iron	Culverts Size Ft.	Bridges No.	Bridges Wood Conc. Iron	Bridges Len'th Ft.	Corduroy L. & W. Ch. Ft.	Repairs Distance Ch.	Number
.....	17820	15x4x3	.....	.....	.....	.....	.....	.....	.....	.....	23
.....	23760	30x4x3	.....	.....	.....	.....	.....	.....	.....	.....	24
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
.....	7650	309x4x3	6	Temp.	.....	.....	.....	.....	.....	.....	27
.....	10560	1200x4x3	6	Temp.	.....	.....	.....	.....	.....	.....	28
.....	2000	.....	3	Temp.	.....	.....	.....	.....	800	.....	29
.....	6600	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
.....	200	300x4x3	4	Temp.	.....	.....	.....	.....	.....	.....	31
.....	.....	400x4x3	4	Temp.	.....	.....	.....	.....	.....	.....	32
.....	.....	200x4x3	3	Temp.	.....	.....	.....	.....	.....	.....	33
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	34
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	..... *	35
.....	.....	3000x4x4	3	Temp.	.....	1	wood	12	.....	½ mile	36
.....	2000	.....	.....	.....	.....	.....	.....	.....	.....	.....	37
.....	900	1100x4x4	.....	.....	.....	4	wood	16	.....	4½ miles	38
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
.....	300	.....	.....	.....	.....	.....	.....	.....	.....	.....	41
.....	1400	.....	.....	.....	.....	.....	.....	.....	.....	.....	42
.....	3000	.....	3	Temp.	.....	.....	.....	.....	.....	.....	43
.....	.....	100x4x3	3	Temp.	.....	.....	.....	.....	.....	.....	44
.....	.....	2000x4x4	.....	.....	.....	.....	.....	.....	.....	.....	45
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	48
.....	10460	150x4x3	4	Temp.	.....	.....	.....	.....	.....	.....	49
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
.....	3300	1600x4x3	3 1	Temp. wood	..... 6x6	.....	.....	.....	.....	.....	51

DISTRICT

.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
.....	9110	831x2x2	.....	.....	.....	.....	.....	.....	.....	.....	6

* 50 ft. Ry. Siding.

DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN

YEAR 1919.

MATHESON

Number	Township	Location (On line between..... from..... to.....)	Cutting L. & W. Ch. Ft.	Burning L. & W. Ch. Ft.	Stumping L. & W. Ch. Ft.	Grubbing L. & W. Ch. Ft.	Grading L. & W. Ch. Ft.
7	Bowman	Bet. 6 & 7 across 6 (N. ½)					
8	do	Bet. 4 & 5 S. of Ry. crossing					
9	do	Bet. 6 & 7 across V & VI					
10	do	Bet. 4 & 5 " VI					
11	do	On N½ Lot 5 Con VI					
12	do	Bet. III & IV across 3 & 4					80x24
13	do	Bet. 2 & 3 across IV (S. ½)					4x24
14	do	Bet. IV & V " 9, 10 & pt. 8	100x66	80x66	100x33	100x33	
15	do	Bet 10 & 11 " VI	80x66	80x66	80x33	80x33	
16	Bond	Bet. 2 & 3 across V					
17	do	Bet. II & III across 3	18x66	18x66			
18	do	Bet. 2 & 3 across III	50x66	50x66			
19	do	Bet. 2 & 3 across IV	80x66	80x66			
20	do	Bet. 2 & 3 across V	50x66	50x66			
21	Carr	Trunk Road, R.R. crossing to Wahtaybeg River					
22	do	Bet. II & III across 1 & 2					
23	do	Bet. 2 & 3 " II					
24	do	Bet. 4 & 5 " I & II					
25	do	Bet. 4 & 5 " V & VI					160x24
26	do	Bet. V & VI " 5 to 9 inclusive					164x24
27	do	Bet. V & VI across 10 & 11	80x66		80x33	80x33	80x20
28	do	Bet. 3 & 4 across I, II & III					
29	do	Bet. IV & V " 5					
30	do	Bet. 4 & 5 " Con. VI pt.		20x33	20x33	20x33	
31	do	Bet. 10 & 11 " II, III & pt. IV	130x66	130x66	130x33	130x33	
32	Gorrie	Bet. 2 & 3 across VI	60x66	60x66	60x33	60x33	
33	Hislop	Bet III & IV " 8					
34	do	Bet. III & IV " 6 to 10 inclusive	200x66	200x66	200x33	200x33	200x24
35	do	On Con. I across 6 (Trunk rd)					
36	do	Bet. V & VI " 10 & 11					
37	do	Bet. II & III " 12 & 13					80x24
38	do	Bet. 9 & 10 " II & pt. III		120x33	120x33	120x33	
39	do	Bet. 11 & 12 " IV					41x24
40	Playfair	Bet. 2 & 3 " V (S. ½)		20x66	20x33	20x33	
41	do	Bet. 7 & 8 " VI					
42	do	Bet. V & VI " 9, 10 & 11	120x66	120x66	120x33	120x33	
43	do	Bet. V & VI " 7 & 8					83x24
44	do	Bet. 8 & 9 " VI					80x24
45	do	Bet. 2 & 3 " VI	80x66	80x66	80x33	80x33	
46	do	Bet. 5 & 6 " V					80x24
47	do	Bet. 3 & 4 " II	40x66				
48	do	Bet. 3 & 4 " III	80x66		80x33	80x33	
49	do	Bet. IV & V " 6 pt. 7					22x24
50	Stock	Bet. I & II " 6	40x66	40x66			
51	do	Bet. I & II " 5	40x66	40x66			
52	do	Bet. 4 & 5 across V	80x66	80x66	80x33	80x33	
53	Taylor	Trunk Road across III & IV					
54	do	Bet. 8 & 9 across IV (S. ½)					

DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE.

Continued.

DISTRICT—Continued

Gravelling L. & W. Ch. Ft.	Side-Ditching Ft. Lin.	Off-take Ditching L. & W. Ft. Ft. Ft.	Culverts No.	Wood Concrete Iron	Size Ft.	Bridges No.	Wood Conc. Iron	Len'th Ft.	Corduroy L. & W. Ch. Ft.	Repairs Distance Ch.	Number
50x8											7
40x8											8
										2 miles	9
										½ mile	10
										*	11
			2	wood	4x6						12
			3	wood	3x4						
											13
											14
											15
						1	wood	74	(4 acres	cleared)	16
											17
											18
											19
											20
160x8			4	wood	4x4					2 miles	21
80x8											22
80x8											23
120x8										2 miles	24
			10	wood	3x4						25
			2	wood	6x6						
											26
											27
										3 miles	28
			5	wood	6x10	1	wood	22			29
											30
											31
											32
						1	wood	144			33
			1	wood	10x10						34
			16	wood	14x3	1	wood	20			
										12 miles	35
			1	wood	8x8					1 mile	36
											37
											38
											39
											40
					1	wood	58				41
											42
			7	wood	3x4						43
			8	wood	3x4						44
											45
											46
											47
											48
			2	wood	4x4						49
											50
											51
	1518										52
			1	wood	3x4					2 miles	53
			6	wood	4x4	1	wood	25		½ mile	54

* Old camps removed.

DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN

YEAR 1919.

MATHESON

Number	Township	Location (On line between..... from..... to.....)	Cutting L. & W. Ch. Ft.	Burning L. & W. Ch. Ft.	Stumping L. & W. Ch. Ft.	Grubbing L. & W. Ch. Ft.	Grading L. & W. Ch. Ft.
55	Taylor.....	Bet. IV & V across 12.....	.....	.....	.....	.....	.....
56	do	Bet. 2 & 3 " I & II	160x66	120x66	120x33	120x33	.....
57	do	Bet III & IV " 1, 2, 3 & pt. 4	.....	140x33	140x33	140x33	.....
58	do	On N. ½ Lot 9 Con. V.....	.....	.....	.....	.....	.....
59	Walker.....	Trunk Rd. across lots 9 & 10	82x66	82x66	82x33	82x33	82x20
60	do	On N. ½ Con. II Lot 12.....	.....	.....	.....	.....	.....
61	do	Bet. IV & V across 9, 10 & 11	120x66	120x66	120x33	120x33	.....
62	do	Bet. IV & V across 12	.....	.....	.....	.....	40x24
		BOUNDARY LINES.					
63	Beatty & Hislop	Across 4 to 13 inclusive....	.....	.....	.....	.....	.....
64	do	" pt. 8 & 9 & pt. 11....	.....	.....	.....	.....	.....
65	Beatty & Carr..	" N. ½ Con. IV.....	.....	.....	.....	.....	.....
66	Benoit & Cook ..	" 5, 6, 7, 8 & pt. 9.....	20x66	.....	20x33	20x33	.....
67	Bond & Stock...	" 1 & 6.....	.....	.....	.....	.....	.....
68	do ..	" 1 to 6 inclusive.....	.....	.....	.....	.....	.....
69	Bond & Currie ..	" IV	.....	.....	.....	.....	.....
70	do ..	" III.....	15x66	15x66	.....	.....	.....
71	do ..	" III & pt. IV.....	.....	130x66	130x33	130x33	.....
72	do ..	" V & pt. IV	.....	50x66	50x33	50x33	.....
73	Bowman & Carr	" 5 to 12 inclusive	.....	.....	.....	.....	.....
74	Bowman & Currie	On Con. V	.....	.....	.....	.....	.....
75	Carr & Taylor..	Across I to IV inclusive...	.....	.....	.....	.....	.....
76	Clergue & Walker.	" I & S. ½ II	.....	.....	.....	.....	.....
77	Currie & Taylor	" 1 to 12 inclusive....	.....	.....	.....	.....	.....
78	Stock & Taylor.	" Con. VI	.....	.....	.....	.....	.....
79	do .	" " II to VI inclusive	.....	.....	.....	.....	.....
80	do .	" " I	.....	.....	.....	.....	.....
81	do .	" N. ½ II & S. ½ III....	.....	.....	.....	.....	.....
82	do .	" N. ½ IV.....	.....	.....	.....	.....	.....

PORCUPINE

1	Mountjoy	Trunk Road Timmins to Mattagami.....	.....	.....	.....	.....	.....
2	do	Bet 4 & 5 across pt. II & III.	90x66	.....	170x33	170x33	.....
3	do	Bet. 2 & 3 across IV, V & VI	.....	40x30	20x30	.....	40x24
4	do	Along river " pts. V & VI	75x66	75x66	75x24	75x24	.....
5	do	Bet. 4 & 5 " " III....	29x66	.....	29x24	29x24	.....
6	Tisdale	S. Porcupine to Davidson Mine	.....	.....	.....	.....	.....
7	do	S. Porcupine to Timmins..	.....	.....	.....	.....	.....
8	Mountjoy & Tisd'le	Boundary across III & IV..	.....	.....	.....	.....	.....
9	do do	do do V & VI...	120x66	80x66	80x30	80x30	.....

MACADAM

1		Road from Elk Lake to Gowganda	120x66	120x66	120x33	120x33	207x20
2		Road from Swastika to Kirkland Lake.....	65x66	6x66	6x33	6x33	151x24

DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE.

Concluded.

DISTRICT—Concluded

Gravelling L. & W. Ch. Ft.	Side Ditching Ft. Linl.	Off-take Ditching L.W.& D. Ft. Ft. Ft.	Culverts No.	Culverts Wood Concrete Iron	Culverts Size Ft.	Bridges No.	Bridges Wood Conc. Iron	Bridges Len'th Ft.	Corduroy L. & W. Ch. Ft.	Repairs Distance Ch.	Number
40x8											55
											56
											57
		1333x2x2									58
			5	wood	4x4						59
										½ mile	60
											61
			2	wood	3x4						62
										5 miles	63
80x8											64
20x6		500x3x2½	3	wood	3x4					8 miles	65
											66
						2	Repaired				67
		1056x3½x2	1	wood	3x4					3 miles	68
	9073	594x3½x2	2	wood	4x4	1	wood	76x14			69
											70
											71
	8100										72
						1	Repaired			4 miles	73
			3	wood	3x4						74
		1695x3½x3	5	wood	3x4					4 miles	75
120x8			1	Reprd.						1½ miles	76
										6 miles	77
80x8											78
										5 miles	79
										1 mile	80
80x8											81
60x8											82

DISTRICT

36x8											1
									1000x16		2
	9600	1320x3x5	5	wood	3x3	1	wood	40	4446x16	1 mile	3
											4
											5
60x80											6
20x12										*	7
80x8											8
											9

ROADS

4500	23500	1.5 miles	10 15	iron Recon'd						11750x10 †	1
1572	27984x	1.62 "	4 6 1 1 3	Con. 18" " 24 " 30 twin 30 reconstd					1750	3800x14‡	2

* 20 ch. x 12 ft. Rock Sheeting. † 7 miles repaired. ‡ 4 miles repaired.

Report on the Construction and Maintenance of Highways and Bridges Under the Provisions of the Northern and North Western Ontario Development Act 1912 and Amendments.

(During the Season of 1919.)

To the Honourable the Minister of Lands and Forests:

Sir,—I have the honour to submit the following report of work done on the construction and maintenance of roads and bridges under the provisions of the above Acts during the season of 1919:—

Operations were carried on in the Districts of Rainy River, Kenora, Port Arthur and Fort William, Sault Ste. Marie, St. Joseph Island, Algoma, Sudbury, Nipissing, Parry Sound, Muskoka and the Counties of Renfrew and Simcoe.

During the season considerable work was done in the Rainy River Valley; 22 miles of new road were cut out and constructed; during the winter of 1918-19 considerable gravel was hauled for re-surfacing of trunk roads. Several of the trunk roads running north and south into the newly settled townships were extended, and tap drains dug to assist in draining off the swamp lands as well as the roads. On the 1st and 2nd of July last, over 6 inches of rain fell in the two days, causing great damage to the culverts and small bridges and in some instances washing out the roads. This damage had to be repaired and the main trunk roads were constantly dragged throughout the summer when required, and re-surfaced with gravel where they became rutted. There was considerable immigration into this district, and many of the new settlers in the back townships are handicapped for want of roads. The main trunk roads are now in fairly good condition but large expenditures will still be required in this district, to meet the requirements of the incoming settlers.

In the District of Kenora the trunk road between Wabigoon, Dryden, Oxdrift and Vermilion Bay was worked over, re-constructed in places, and surfaced with gravel. In this district there is a pressing want for more roads in the agricultural country between Wabigoon and Dryden on the Canadian Pacific Railway and the Grand Trunk Pacific Railway in the vicinity of Quibell Station. This country is becoming settled up and it will be necessary, in order to retain settlement, to spend considerable money in the construction of new roads.

In the Port Arthur and Fort William Districts large expenditures were made in re-surfacing with gravel the main trunk roads; and also in constructing new roads. The International or Scott highway to Duluth was put into good condition. The construction of a new road running east from Port Arthur towards Loon Lake, Dorion and Nipigon was begun; about 15 miles of this road was partly constructed along the Hydro-Electric transmission line between Port Arthur and the Nipigon River.

On the trunk road between Sault Ste. Marie and Sudbury, considerable work was done. The gap between Algoma Mills and Cutler has been partially completed, and repair work was done between Cutler and Sudbury; and between Algoma Mills and Sault Ste. Marie.

On St. Joseph Island, the work commenced three years ago was continued; and the trunk roads are now in good condition.

In the Sudbury District, new roads were constructed, and roads previously constructed were kept in repair. Considerable expenditure was made in the

mining district around West Shining Tree, to meet the requirements of mine owners, who are now beginning to develop the gold mines in that district. Several miles of new road were also constructed to accommodate the settlers in the outlying townships. The trunk road between Sudbury and North Bay was kept in fairly good condition; large quantities of gravel and crushed rock were used in re-surfacing this road in the worst places; the road was frequently dragged. A new road was constructed between Warren on the Canadian Pacific Railway, south to the Village of St. Charles. The old road between Rutter Station on the Toronto Branch of the Canadian Pacific Railway, running east about 20 miles to Lake Nipissing, was partly re-constructed and graded.

The trunk road between North Bay and Mattawa was re-graded and re-surfaced in places, and continued east of Mattawa towards Chalk River. Between Pembroke and Petawawa, the road was kept in repair; and between Chalk River and Mattawa, about 25 miles of the old Pembroke and Mattawa Road was widened and re-graded. On the trunk road from North Bay, south to Bracebridge, a large expenditure was made in reconstruction, and in diverting the old road where it was found necessary in order to improve the grades. The worst parts of this road have been completed as far south as Washago. On the old road running west from Trout Creek Station on the Grand Trunk Railway, towards Commanda, construction was commenced, and about 12 miles partly completed. The road running west from Powassan to Nipissing Village was continued.

The following is a more detailed statement of the different roads constructed and repaired in the various districts during the season; and appended to this report is a statement of the expenditures and an approximate estimate of the amounts which will be required to construct and maintain roads during the season of 1920.

I have the honour to be, Sir,

Your obedient servant,

J. F. WHITSON,
Commissioner.

DISTRICTS OF PARRY SOUND AND MUSKOKA.

Trunk Road from Callander, South:

Work was continued on this road throughout the winter of 1918-19. Several of the worst parts of the road, where gravel could not be procured conveniently during the summer season, were surfaced with gravel; more particularly in the vicinity of Barriedale, Burk's Falls, Katrine, and Huntsville. The work was also continued throughout the summer season up to the end of October. Over 40,000 cubic yards of gravel were used in re-surfacing this road. From Callander to Powassan the road was dragged at different times throughout the season when required. Between Novar Station, on the Grand Trunk Railway, and Huntsville, a diversion of 5 miles was made along the right-of-way of the Grand Trunk Railway, southerly from Novar Station, to avoid very heavy grades on the old road running west and south from Novar. The new road as now constructed and gravelled is a great improvement; there are very few grades on it, and the length

of the road has also been cut down considerably. The road is now in fairly good condition for automobile traffic over this section, which was considered one of the worst sections on the road between North Bay and Bracebridge. From Utterson the road was diverted westerly to strike the Parry Sound road north of Beatrice; and from the diversion, the road extended southerly, passing through Falkenburg. In this section, the old road was widened, ditched, graded and gravelled in places. From Novar north to Burk's Falls, the road was gravelled in places, graded and ditched; more particularly in the section near Katrine, where there was a bad section, extending over 7 miles. North and south of Burk's Falls, the road was re-constructed in places and graveled. At Sundridge a large stone culvert was constructed, and north of South River Station a bridge was built across the South River, with a span of 47 ft., with stone abutments; and a second bridge, over Black Creek, a tributary of the South River, was constructed with stone abutments, with a span of 23 ft. A stone bridge was also built over a small creek with a deep valley, at the new diversion north of Melissa Station. Immediately north of Huntsville, several small diversions and rock cuts were made, and considerable surfacing with gravel done. The road between Bracebridge and North Bay is now in fairly passable condition for automobile traffic, although there still requires considerable surfacing to be done with gravel. North of the diversion of the trunk road with the Parry Sound road, north of Beatrice, a rock cut was made near the Skeleton Hill, along the shore of a small lake. This has greatly improved the grade on the road from Rosseau to Bracebridge. It will take a considerable expenditure during the season of 1920 on this road, more particularly between Novar and Bracebridge, to put the road into good condition.

Between Bracebridge and Gravenhurst, no work was done on the trunk road during this season. It was found, however, that south of Gravenhurst near the Severn River and Washago, the old road, which had been built many years ago, had become badly rutted for want of attention. In this section, extending a distance of over 6 miles, operations were started in September from Severn Bridge, southerly through the village of Washago. The road was regraded, widened in places and brushed out; about 11½ miles of the road was re-surfaced with crushed rock and gravel. Owing to the wet season, this road was not completed, and the work has since been continued, re-surfacing with crushed rock.

DISTRICT OF PARRY SOUND.

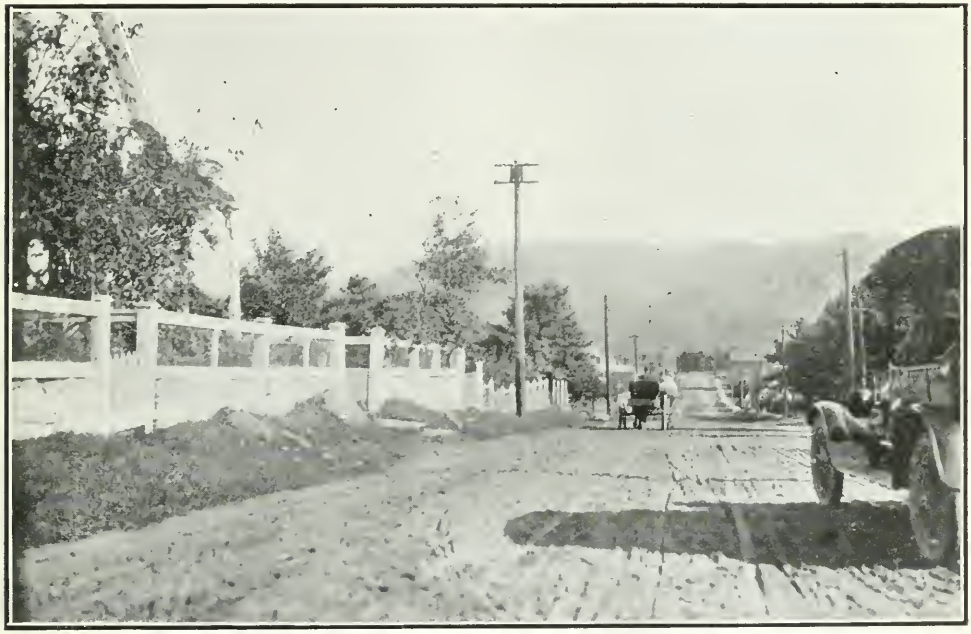
Nipissing Road:

Between Powassan Station on the Grand Trunk Railway north-westerly to Nipissing Village, a distance of about 10 miles, which was graded two years ago and gravelled in places, was resurfaced in the worst places, 2,000 cubic yards of gravel being used. This work was performed during the winter season. Throughout the summer the road was dragged and kept in fairly good condition. This road is part of the Powassan and Restoule Road it extends westerly for a distance of over 40 miles, it is one of the oldest roads in the district. West of Nipissing the road was in bad condition; it passes through a country which has been settled for over 25 years. The country is broken and rocky, but in places there is a very fine agricultural land with fairly prosperous settlers. These settlers have no other access to the railway but by this particular road. An exploration was made of

the road and it was found that immediately west of Nipissing village there was a very bad grade, rocky and almost impossible to go up or down with heavy loads. A diversion was made to the north to avoid the heavy grade. The road has been cut out and it is hoped that next season the Department will be in a position to finish the road and continue the work as far west as Restoule. Three small bridges with stone abutments have been constructed near Nipissing village, across a branch of the South River.

Trout Creek and Loring Road:

This road follows the old colonization or timber road constructed in the early days of settlement in the district. It is the only road from the village of Loring, Golden Valley settlement and the village of Commanda, by which the



Entering the town of Mattawa, on the Trunk Road, District of Nipissing.

settlers can reach the railway. The road passes through a typical Parry Sound country, broken and rocky in places, with sections of good land in the valleys. In some sections, more particularly that immediately west of Trout Creek Station, the soil is a light sandy loam or sand. This class of country extends westerly for about 5 miles. The old road constructed many years ago and mostly repaired by settlers, was in bad condition: very little attention had been paid to drainage or grading. The road has been widened, ditched and graded for a distance of about 8 miles, where it ended in a rough, rocky, hilly section and where a diversion had to be made for a distance of 5 miles to the north, along the valley of a small stream. On this new road a fairly good grade was found: the road has been cut out and grubbed and is now ready for grading as far as the village of Commanda. This diversion leaves the old road about 8 miles west of Trout Creek Station and touches the old road again at the village of Commanda, beyond which

no new work has been done upon the old road. West of Commanda to Loring the road passes through Golden Valley, in which there is a good settlement of fairly prosperous farmers, the land in many places being first class. In other sections the road passes through a rocky sparsely settled country where the road will have to be diverted in some instances, in order to better the grades. This country has been settled in places for the last 40 years and the only access to the railway, for these settlers, is along this road. At the present time it is a difficult matter for the settlers to reach a market except during the winter season. The first 8 miles of the road, commencing at Trout Creek Station, has been well graded and gravelled in places: 21 iron culverts and 6 wooden culverts were placed. Several of the hills were cut down to improve the grade. The hills on both sides of the South River bridge were cut down and the grade very much improved. Owing to the wet season unfortunately we were unable to complete the gravelling of some sections of the road and this will require to be done later on.

Distress Road:

On the main road from Sundridge to Magnetawan village a diversion was made around what is locally known as "Distress Hill": 1 mile of new road was cut out and gravelled, in order to improve the grade. The old road passes over a rocky hill which it was found impossible to cut down. Over 1,000 yards of gravel were used in surfacing this road.

Townships of Conger and Freeman:

The road from Parry Sound, running south to Lake Joseph and Lake Muskoka was extended from Gordon Bay, along the Canadian Pacific and Canadian Northern Railways to Foote Bay, a distance of about 5 miles, through the townships of Conger and Freeman. This road connected with a fairly good automobile road from Foote Bay to Bala, a summer resort on Muskoka Lake. The road followed had been cut out several years ago, but was grown up and unused, except during the winter season. The road was cut out, widened and stumped ready for grading. It passes through a comparatively level country, with no bad grades and, when completed, will give the citizens of the town of Parry Sound and villages along the railway access to the summer resorts in the Muskoka Lake country. It will also assist the settlers in getting to a market for their produce. The road requires to be graded and ditched.

The total amount expended on the trunk road, and other roads in the Districts of Parry Sound and Muskoka during the season was $144,043.33.

DISTRICT OF NIPISSING.

Mattawa-Klock Road:

The old travelled road known as the Mattawa and Pembroke road commencing about 3 miles east of the Town of Mattawa and extending east for a distance of over 12 miles, was widened, ditched and graded to a point about 2 miles east of Klock Station on the C.P.R. On this road 5 corrugated iron culverts, 10 wooden culverts and 6 stone culverts were placed. The road was well ditched and graded, 1 bridge was repaired, 1,433 cu. yds. of gravel were used in resurfacing the worst parts of the road. Between the eastern terminus of this work and the western end of the work performed west of Chalk River there is a long section of road which will require considerable repairing and grading. It is part of the old timber

road and although it is passable for cars during the dry season it is unsuitable for traffic during the early spring or late in the fall of the year: it will require brushing out, grading and surfacing with gravel in places.

Callander-Mattawa Road:

This road was constructed by this Branch in 1913 and 1914. During the interval some repair work was done in places by this Branch, but little or nothing by the settlers along the road. There is considerable traffic over the road and it

View on the Pembroke and Petawawa Trunk Road.

became badly rutted in places. The distance between Callander and Mattawa is about 40 miles. The road was re-graded throughout its entire length this season: some of the worst grades cut down: the road widened in places and re-surfaced with gravel where required; the ditches were deepened and cleaned out and several new culverts placed. The road is now in fairly good condition, although there are still some parts of the road which will require re-surfacing with gravel later on.

North Bay-Trout Lake Road:

Between North Bay and Trout Lake Mills about 2 miles of this road were re-graded and ditched in places and 1 mile re-surfaced with gravel, but owing to wet weather in October the road was not finished.

A view of the Trunk Road between the town of Pembroke and Petawawa Military Camp, showing a stone road re-surfaced with coarse gravel.

Township of Ferris Road:

The road from North Bay to Trout Lake south side was repaired and part re-surfaced with gravel.

Trunk Road from North Bay to Callander:

This road was re-surfaced with gravel. 2,200 cu. yds. gravel being used.

North Bay to Sudbury Trunk Road:

This road was dragged and repaired throughout its entire length, 80 miles between the Towns of Sudbury and North Bay; in places it was re-surfaced with gravel. East and west of Meadowside 3,070 cubic yards of gravel were hauled by train from a point on the Canadian Pacific Railway west of Sudbury from the Canadian Pacific Railway pit at Phelan. North of the Village of Markstay, 1,055 cubic yards of gravel were used in re-surfacing 1½ miles of the road leading into the village.

In the Townships of Kilpatrick and Caldwell, east of the Village of Verner, about 3½ miles of the road were re-surfaced, 2,205 yards of gravel being used. In sections west of Sturgeon Falls the road was also re-surfaced where it had become rough, 900 cubic yards of gravel and 1,203 cubic yards of stone being used. Several culverts and small bridges were repaired. Between the Town of Sudbury and the Village of Coniston a stone road was constructed about four years ago. The road was re-surfaced with crushed rock in places for a distance of six miles, and with coarse gravel for two miles; 1,435 cubic yards of crushed rock and 600 yards of gravel were used: five corrugated iron culverts were placed and the road was well rolled with 12 ton roller and is now in first class condition. The bridge across the Veuve River, about three miles west of Warren Station on the Canadian Pacific Railway, which was commenced last season, was completed. The bridge has a clear span of 60 feet with stone abutments; 500 cubic yards of rock were used in filling in these abutments.

In the vicinity of Meadowside, where the country is very flat, ditches had to be deepened and five iron culverts were used to assist in the drainage. The road between Sudbury and North Bay is now in fairly good condition, although there are still places which will require gravelling; more particularly in that portion between Sturgeon Falls and Meadowside.

The amount expended on the above work during the season was $69,484.31.

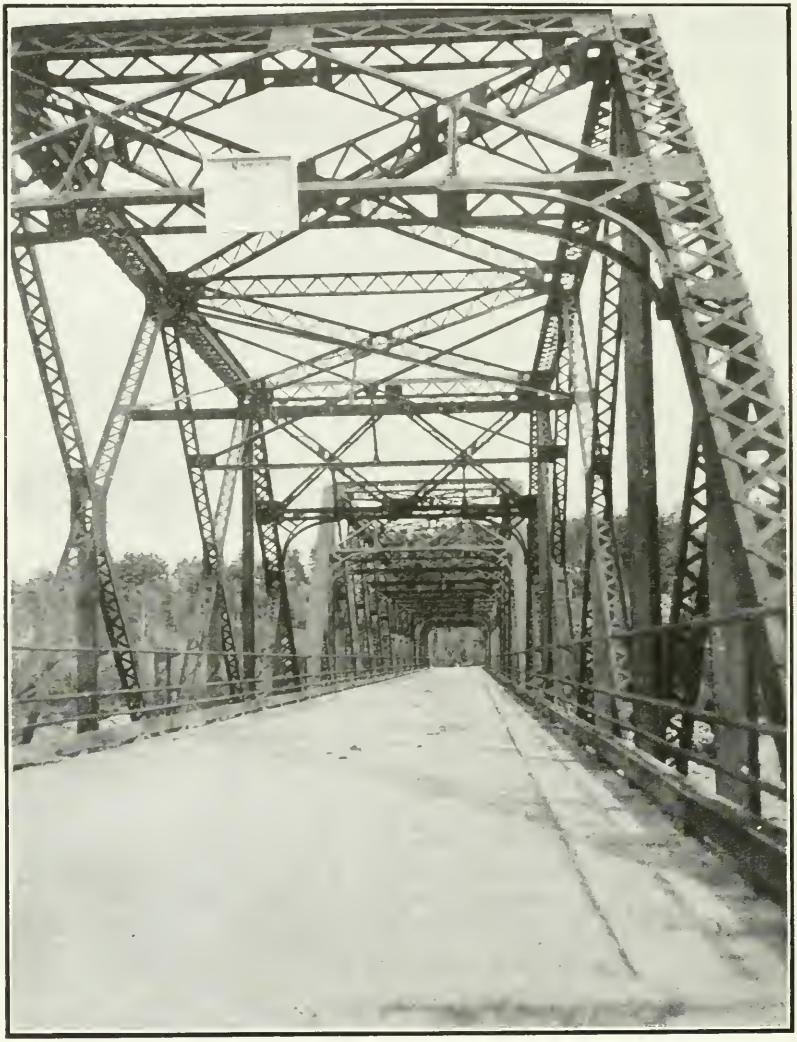
COUNTY OF RENFREW.

Trunk Road, Mattawa to Pembroke:

Between Pembroke and Petawawa and Chalk River to Bissett's Creek.—The trunk road between the Town of Pembroke and the Petawawa Military Reserve, in length about 12 miles, which was constructed a few years ago, was placed under a foreman, with a small gang of from 3 to 5 men and from 1 to 2 teams; who were engaged throughout the season commencing about the 1st June in improving and maintaining this road. The road was continually dragged when required, and new gravel was spread on the road wherever it became rutted. In places, the road was widened where necessary, and the ditches deepened. Over this road there is a very heavy traffic. This system of constantly keeping the roads in repair was found very satisfactory on this particular road; and throughout the entire season the road was in splendid condition.

Twenty miles of this road were brushed out and ditched, and 15 miles graded; 44 corrugated iron culverts, 8 stone culverts and several wooden culverts were placed; 1 cedar bridge with 14 ft. opening and stone abutments was built, with 300 yds. of rock filling; 1 stone culvert bridge 44 ft. wide and 7 ft. high was constructed across Barr's Creek, with walls on each side 120 ft. long, 20 ft. wide

and 3½ ft. high: also 1 culvert 6½ miles west of Chalk River with rock fill 100 ft. long, 12 ft. wide and 3½ ft. high. This road was well ditched and surfaced with gravel in the worst places. It passes through a country that has been sparsely settled for over 50 years. The road as now constructed, was originally built and known as the Pembroke and Mattawa Road; and was used by the lumbermen for transporting supplies from Pembroke west to Mattawa during the



The Interprovincial Bridge crossing the Ottawa River at the Joachim Rapids, near the Trunk Road from Pembroke to Mattawa.

early sixties. The land along this road is a light sandy loam, stoney and rocky in places; and while there are sections with fairly good agricultural land, taking the country as a whole, it is not very well suited for agricultural purposes. There is, however, considerable traffic on this road during the winter season in taking supplies from Pembroke west to Deux Joachim, where there is an interprovincial iron bridge spanning the Ottawa River; and from this bridge northward through

Quebec Province there is a timber road extending for 100 miles or more through the pine and spruce forests. The work as performed this season extended as far west as the branch road leading to the interprovincial bridge, which is distant only a few miles from our trunk road. From about the same point, the road branches southerly a few miles to Moore Lake Station on the Canadian Pacific Railway. This branch road to the station was brushed out, grubbed in places, and the worst grades cut down. This station is where the settlers along the trunk road within a reasonable distance market their supplies. The road from Chalk River west, passes in places over sandy plains, grown up with a thick second growth of pine and other timber, which even now have a commercial value. The road passes in sight of the Ottawa River throughout a good portion of its length, and the scenery is very fine. At present there is considerable automobile traffic

On the banks of the Ottawa River, near the Interprovincial Bridge, between Ontario and Quebec, across the Joachim Rapids; one of the most noted transporting points in the early days of lumbering in the Ottawa Valley.

between Mattawa and Pembroke, although the road west of where our work terminated and Klock Station, is almost impassable in places. This road was repaired in places in the vicinity of Bisset Station, where it was cut out and widened for a distance of 6 miles and in the vicinity of Adelard Station, 5 miles of the road were brushed out, and 3 miles stumped and stoned, ready for grading.

The expenditure on this work during the season amounted to $24,421.55.

DISTRICT OF SUDBURY.

Garson to Coniston Road:

This road was cut out and graded 3 years ago. There was considerable heavy traffic over the road between the Mond Nickel Company's smelters at Coniston and the Company's mines at the village of Garson, the distance being a little over

5 miles. This road was all well surfaced with crushed rock, over 5,000 cubic yards of rock being placed thereon, and well rolled with a 12-ton roller and surfaced in places with gravel, of which 1,067 yards were used. Several corrugated iron culverts were placed and the road is now in good condition.

Sudbury to Garson Village:

This road was constructed 7 years ago. A diversion, however, was made on the road a few years ago, but never surfaced. This diversion reduced the distance and grades considerably; 3,729 cubic yards of crushed rock were used on this road and 1,200 yards of gravel, the road being well rolled and corrugated iron culverts placed where required, and a bridge, with an 18-ft. span, built on lot 12, con. 6, township of Neelon. This bridge was constructed with stone abutments. The road between Sudbury and Garson is now in good condition.

Sudbury to Hanmer:

The road between Sudbury and Hanmer, which was constructed 7 years ago, became badly rutted, as the municipalities along the road have taken little or no interest in maintaining it. The road was re-graded and ditched in places and surfaced with gravel and slag from the mines, 2,044 cubic yards of slag and 219 yards of gravel being used. The repairs along this road extended for a distance of 8 miles.

Hanmer to Capreol Road:

A few steep hills were cut down and the road was repaired and re-ditched and parts surfaced with gravel, 414 cubic yards of gravel being used. This road was constructed about 7 years ago and became badly rutted in places, owing to the fact that little or no repair work has been done by the settlers along the road.

Sudbury to Azilda Road:

This road was repaired and dragged for a distance of 6 miles, 400 cubic yards of gravel being used.

Coppercliff to Creighton Road:

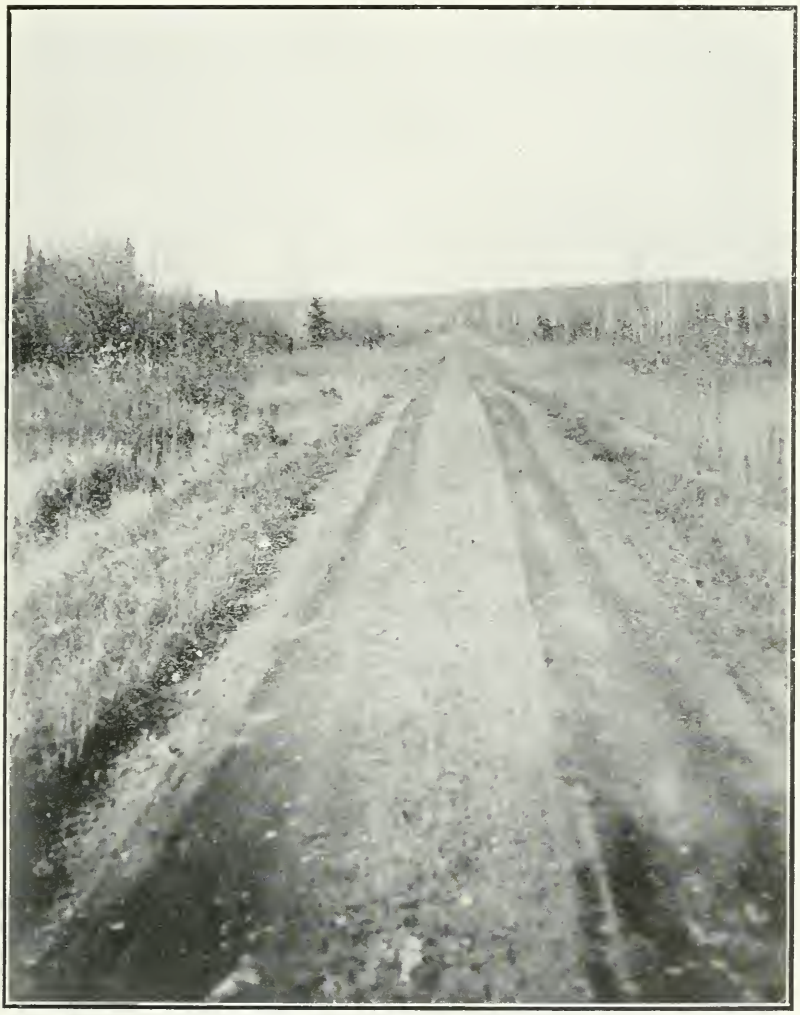
This road was dragged for 6 miles and repaired for 3 miles. Upwards of 500 cubic yards of gravel were used in repairs. It is now in first class condition.

Warren to St. Charles Road:

Between Warren Station on the Canadian Pacific Railway and the village of St. Charles, the distance is about 9½ miles, and between these two villages the old road was, in many places, almost impassable for traffic during the spring and fall seasons. Along this road there is a good settlement, more particularly in the vicinity of the village of St. Charles, and a great deal of farm produce passed over the road. The road required grading, ditching and widening and the grades had to be cut down; 9½ miles of the road were graded and about 5 miles were surfaced with gravel. Corrugated iron culverts were placed, where necessary, and 6 large wooden culverts repaired or re-built. A small wooden bridge was re-constructed and the road is now in very fair condition.

MacFarlane Lake Road:

Part of this road between con. 6 and 7, Township of Dill was reconstructed, graded and gravelled for ¾ mile, and in the Township of Broder the road was repaired for 3 miles, graded for 3¼ miles and gravelled for 2½ miles; 2 small bridges were repaired and 22 iron culverts placed.



A view of the International or Scott Highway between Fort William and Pigeon River, showing road surfaced with shale and gravel.

Richard Lake Road (A branch of the Sudbury and MacFarlane Lake Road):

This road was brushed out, graded and repaired for 2½ miles; 6 culverts were repaired and 5 new culverts placed; also 1 wooden bridge repaired; the road was gravelled in places where required.

Townships of Balfour and Dowling:

The road along the town line between these townships was cut, brushed, cleared and stumped for 1 mile; and ditched for 2 miles and culverts repaired.

Wahnapitae Road:

Between Garson and Wahnapitae Lake, for a distance of 6 miles, the road was repaired and surfaced with gravel in some places.

A view looking south on the International or Scott Highway, showing the mountain ranges overlooking Lake Superior.

Rutter-Noelville Road:

This road commenced at a point on the Sudbury and Toronto Branch Canadian Pacific Railway at Rutter Station and extends easterly for 20 miles to the west arm of Lake Nipissing. The old road has been in use for nearly 20 years; it passes through, in places, first-class agricultural land, it being one of the best

farming sections in that district. The country is fairly level, the soil is of clay and clay loam, broken in places with rocky ridges: but on the whole, the country is well adapted for agricultural purposes and there is a prosperous settlement along the road. The road in many places has never been graded. Work was commenced early in September on the worst part of the road, which is within 11½ miles of Canadian Pacific Railway, where the country is very rocky, more particularly at the crossing of the Murdock Creek. This portion of the road was improved, and on each side of the bridge for a considerable distance was well graded and the rock cut down; the crossing is now in first-class condition. About 4½ miles of the road was graded and 2 miles re-surfaced with gravel; 17 new culverts were put in and over 1,200 cubic yards gravel used. The road requires considerable expenditure yet. The only outlet the settlers have in this district is by Rutter Station in the summer and winter seasons, or by boat across Lake Nipissing in the summer season. There is a large section of fine agricultural land tributary to this road and I would advise further expenditure in the way of grading and gravelling.

Larchwood to Levack:

This road was graded and repaired for a distance of 2 miles.

Shining Tree Road:

This road leaves the Canadian National Railway at Westree Station, 73 miles north of Sudbury, and runs in easterly and north-easterly direction to West Shining Tree Lake and Wasapika Lake. The distance to West Shining Tree Lake is about 23 miles and Wasapika Lake 28 miles. The road as far as West Shining Lake was cut out 6 years ago and the first 16 miles graded and corduroyed in places. No repairs were done during the interval, and the road was badly broken up. During the last 2 seasons there has been considerable heavy traffic over the road by the miners taking in mining machinery and supplies. The road passes through a country that is heavily timbered with Jack Pine, Spruce, Poplar and other timber; the road is comparatively level with very few bad grades; the soil is either light sandy loam, sand, or gravel, until within a few miles of West Shining Tree Lake where the country becomes rocky. There are a few good gravel pits along the road but road making material in some places is difficult to procure. The road has been regraded and ditched in places; new culverts have been constructed and about 8 miles re-surfaced with good gravel; the road to West Shining Tree is now in fairly good condition; beyond that point to Wasapika Lake it requires stumping and grading and in places widening. From all appearances, judging from the amount of work that has been carried on in this mining district during the past season, there are good prospects of the district making a mining camp. Several Mining Companies have done considerable work on their properties this season, and a few of them have put in small plants, and the indications are that there will be considerable activity in this gold mining district in the near future. All of their machinery and supplies will pass over this road.

St. Charles to Hagar Road:

A winter road was cut out between the townships of Dunnet and Appleby, south of the Canadian Pacific Railway to connect the village of St. Charles with the Canadian Pacific Railway at Hagar Station. A few hills were cut down, and

grades improved. This road will require to be improved in order to make it fit for summer traffic.

The total amount expended on the above work during the season was $122,765.94.

Sault Ste. Marie-Sudbury Trunk Road, and Work in the District of Algoma, in the Vicinity of Sault Ste. Marie.

Sault Ste. Marie-Sudbury Trunk Road, Algoma to Cutler:

Work was commenced in June on the gap, 19 miles in length, between Algoma and Cutler. This portion lies in difficult country from a construction standpoint, being rough and rocky with numerous swamps.

Three camps were installed, one working east from Algoma, one west from Cutler and a double camp working in both directions from Spragge.

At the end of the season 11 miles had been completed, of which 6 were gravelled. Of the remainder, 5 miles were partially completed so as to be passable, but still requiring a considerable amount of work, including one rock cut of 400 yds. and 3 smaller ones, drainage and the installation of some permanent culverts. Three miles lying along the Serpent River remain to be built.

The section was in general built to a width of 24 ft., reduced to 20 ft. on cuts and fills. Grades have been with three exceptions, kept below 8 per cent., these three being 10 per cent. Sharp turns have been avoided and a good view obtained.

Seventy corrugated metal culverts were installed during the season, the majority of these being bedded in concrete to prevent heaving. One 6 ft. x 6 ft. concrete culvert, 32 ft. long was built at Foz Creek, and one 8 ft. concrete arch 65 ft. long at Shephard's Creek. Four stone culverts were also built. There remain on the ground to be installed, 20 corrugated metal culverts.

During the season a stone crushing plant was authorized, but delivery was not obtained until late in the season. A re-built tractor sent with the outfit was not sufficiently powerful and was replaced with a new machine. This plant has been installed at Shephard's Creek where there is a rock slide of over one hundred thousand tons of naturally broken trap unweathered and of the right size for the crusher. Quarry costs are thus almost eliminated. The same conditions obtain at a number of other points between Sault Ste. Marie and Sudbury. Owing to the lateness of the season only a test run was made with the plant. But six weeks running in the spring will supply the material for that part of the newly constructed road, for which no gravel is available. After that the plant can be moved to different points as required.

In addition to the three miles uncompleted and the five miles partially completed there remains to be built during the coming season, three small reinforced concrete bridges of 18 ft. span.

With a sufficiently early start this section can be opened for traffic early in July of next year.

Sault Ste. Marie to Algoma Mills:

This portion of the road, 102 miles in length, is under charge of a maintenance overseer and has been continually patrolled and kept in repair. In addition to maintenance betterments are being made. During the season, in addition

to steady dragging, 4,000 yds. of gravel were spread on a total distance of 28 miles. Two thousand tons of trap rock from Bruce Mines Quarry were used for repair purposes. Twenty culverts were installed and 8 miles of the road were brushed out. Ditches were cleaned out where necessary, and new outlets built.

Sudbury to Cutler:

This part of the road, 82 miles in length, required considerable work. During the season, 27 miles, between Copper Cliff and Nairn, were repaired and gravelled in places.

Between Webbwood and Espanola, a section, which has always given considerable trouble, 3 large washouts were filled and other repairs made.

A view showing the Hearst Range of mountains, rising over 1,000 feet along the International or Scott Highway, overlooking Lake Superior.

Between Webbwood and Massey one mile of gravel was laid and repairs made. Between Walford and Massey, 3½ miles were re-graded and gravelled, together with one mile of outlet ditching and some miscellaneous repairs.

Ten culverts in all were installed.

St. Joseph Island:

Operations were carried on during the winter months in hauling gravel on to roads, which had been graded the previous season, and as soon as the spring opened up the roads previously constructed were gone over with the road drag, and operations carried on throughout the season. Operations were chiefly confined to the A line, across lots 19 to 25; on the line between lots 5 and 6, across Concessions P, Q, R and S; between lots 10 and 11, across Concessions N, O and P;

on the U line, across lots 10 to 15 and lots 21 to 23; on the D line, across lot 5 and across lots 17 to 21; on side roads 20 and 21, across Concessions 13 and 14. Besides re-ditching and re-grading parts of these roads, necessary culverts were placed. The roads now constructed connect the two main shipping points or villages on the island, Richard's Landing and Hilton; and give access from the main settlements on the island to these villages. The roads on the island are now in good condition. They will, of course, require to be maintained and extended as settlement progresses. During the season over 15,000 cu. yds. of gravel were used in re-surfacing these roads. The roads were all well dragged during the summer season, as necessity required and are now in good condition.

Between the villages of Hilton and Richard's Landing, both of which are situated on the north shore of the island, the road runs north across Campement D'Ours Island to a point opposite Kensington Point on the main land. The passage is made by means of a scow ferry. From Kensington, there is a road connecting with the Sault Ste. Marie-Sudbury Trunk Road at Desbarats Station on the Canadian Pacific Railway. This is a road, however, on which a considerable amount of repair work is necessary. The work outlined has been practically completed, with the exception of a few short roads on the island, and a cut at the north end of the Campement D'Ours Road, work on which has been suspended, owing to the weather conditions this fall. On St. Joseph Island and approaches $22,248.67 has been expended during the season of 1919.

Goulais Bay Road:

The Goulais Bay Road runs northerly from Sault Ste. Marie to the settlement of Goulais Bay and thence to Bellevue on the Algoma Central Railway. One and a half miles were graded and one mile gravelled. Also on an alternative location to the biggest hill on the road with a grade of 20 per cent., which had been cleared in 1917, work was started. This involved a cut of about 4,000 yds., with a corresponding fill, giving a final grade of 8 per cent. This work, when about half done, had to be suspended on account of unfavourable weather conditions.

Rydal Bank Road:

On this road, running northerly from the Town of Bruce Mines, through the Village of Rydal Bank, and thence to Ophir and McFee's Valley, a considerable amount of work was done during this season.

Between Bruce Mines and Rydal Bank ¾ of a mile of road was re-graded and 1¼ miles of gravel spread. Three culverts were repaired.

Between Rydal Bank and Ophir ½ mile of new road was graded and 1¾ miles of gravel laid.

On the McFee's Valley portion ¾ of a mile of gravel was laid.

Wharencliffe Road:

This road runs northerly from the Village of Little Rapids to the Wharencliffe Settlement, near Mississaugi River. The northerly portion, in particular, is extremely rough and at certain seasons almost impassable. It was intended to cut down and improve some of the worst hills and re-grade and drain some of the worst of the other portions. Owing to difficulty in obtaining sufficient labour, this being restricted to the settlers themselves, the programme for the season was

not carried out. Three-quarters of a mile was re-graded and gravelled. Three bridges and some culverts were repaired and re-covered, the cutting down of one of the worst hills partially done.

Bellevue-Searchmont Survey:

On instructions from the Department, during November, a survey and preliminary location of a road near the Algoma Central Railway, from Bellevue to Searchmont was made.

The greater portion of this Sault Ste. Marie work was carried on in charge of Mr. John L. Lang, Civil Engineer; the total cost, including the St. Joseph Island operations above referred to, amounted during the year to $162,937.68.

DISTRICT OF THUNDER BAY.

In the Vicinity of Port Arthur and Fort William.

International or Scott Highway:

Work was commenced on this highway early in April. Several landslides had occurred along the steep mountains adjacent to the road, more particularly at a point known as the Horn Hill; in many instances the old ditches along the foot of the mountain were filled up, and had to be cleaned out and the road widened. In some places it was found necessary to re-surface the road with gravel or shale; 13,700 cu. yds. of gravel or shale rock were used for this purpose, from the international boundary at Pigeon River, north for 25 miles to the Slate River Valley. This road was also dragged several times, or after every rainfall, and kept in first-class condition; 15 new culverts were built where it was found necessary, and all the ditches were opened up or cleaned out; the road was left in first-class condition last fall.

Over this road there is now a large tourist traffic; no less than 17,000 people are reported to have crossed to and from Minnesota, Duluth and Minneapolis during the season. It has become one of the most popular tourist roads between Ontario and the United States in the western parts of the Province. The cities of Port Arthur and Fort William are now deriving a great benefit from this road, besides the settlers along the route. It is a road, however, that will require two small working gangs of 4 or 5 men each and a few teams, dragging and gravelling the road during the summer season; as there are no organized municipalities along the southern 30 miles of this road to maintain it, and very few settlers. There is considerable fine agricultural land along the road, which in a few years may be settled upon; the soil is a heavy clay, admirably adapted to the growth of clover and alsike seed.

Townships of O'Connor and Marks:

Graded road between Concessions 2 and 3, across lots 1 and 2, Township of Marks; and across lots 12, 11, 10, 9, 8 and 7, and through lots 6, 5 and 4 and location Y, Concessions 1 and 2, Township of O'Connor, to the Silver Mountain Road; 6 miles more or less. This road was repaired, hills cut down, ditched and graded.

Township of Conmee:

Brushed out, grubbed, ditched and graded the road between lots A and 1, across Concessions 1 and 2 and south part of 3, 2½ miles; and westerly along the line between Concessions 2 and 3, across lots E, D, C, B, A, 1, 2, 3, and 4, 4½ miles to Hume Station. On this road, hills were cut down, culverts repaired, and the worst places gravelled; two small bridges and 5 culverts were built.

On the International or Scott Highway, showing the remains of the original Pine Forests West of Lake Superior.

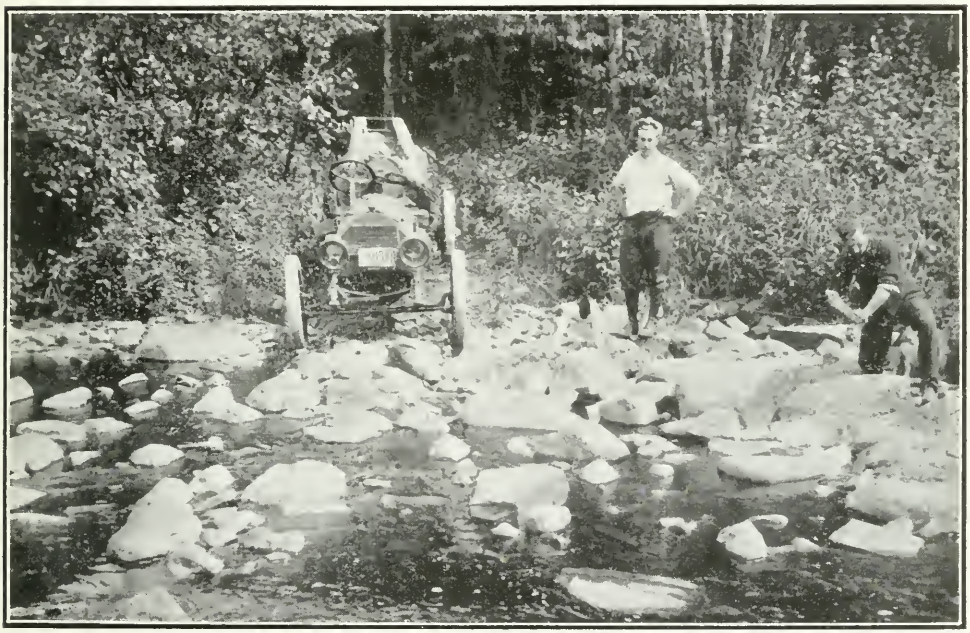
Township of McIntyre, Oliver Road:

This road was dragged and re-graded from the Grand Trunk Pacific Railway crossing in the Township of McIntyre west to Murillo Station on the Canadian Pacific Railway, a distance of 6 miles; 4,322 cu. yds. of gravel were used in the re-surfacing of this road. The road is now in first-class condition between Port

Arthur and Kakabeka Falls, a distance of about 20 miles, the road drag having been used upon it whenever required during the summer season.

Township of Gorham:

The road between lots 14 and 15 across Concessions 1, 2 and 3, and between lots 16 and 17 across Concession 4, 4 miles were re-graded, gravelled and repaired; 17 culverts were placed and 2 bridges repaired, 900 cu. yds. of gravel being used in re-surfacing. The road between lots 6 and 7, across Concessions 1, 2 and 3 was repaired; and across Concessions 4 and 5 was graded 1¾ miles. The road between Concessions 2 and 3 across lots 1, 2, 3 and 4, 2 miles, was widened, graded and repaired. Between lots 10 and 11 across Concession 4 and the south quarter of Concession 5, the road was grubbed, graded and repaired 1¼ miles.



The first automobile to pass over the International or Scott Highway, crossing the Pigeon River at low water.

Gorham and McGregor Townline:

On the townline between the Townships of Gorham and McGregor, across part of Concession 1 and Concessions 2 and 3, the road was repaired and re-graded 2½ miles.

Gorham and McIntyre Townline:

On the townline between the Townships of Gorham and McIntyre, the road across Sections 8, 7, 6 and 5 was cut out for a winter road, 4 miles.

Township of Ware:

Across the north part of lot 19, Concession 2; across lot 19, Concessions 3 and 4; across lot 20, Concessions 4, 5 and the south half of 6; the road was

cut out, graded and repaired; 4 culverts were built, and 4 small bridges repaired. Between Concessions 3 and 4, across lots 4 to 7, the road was cross-layed for 1,300 ft., and cut out 1½ miles for a winter road.

Township of Gillies:

Silver Mountain Road.—This road from Hymers to South Gillies was re-graded for 2 miles between lots 6 and 7 across parts of Concessions, 4, 5 and 6; a new diversion road was constructed around the hill on Concession 3, a distance of 1 mile: 1,300 cu. yds. of gravel were used in re-surfacing this road. The road from Stanley to Hymers was gravelled for a distance of 4½ miles, 3,209 cu. yds. of gravel being used. This road connects Hymers and Gillies with the Twin Cities.

The inspector visiting a typical log school-house on the International or Scott Highway.

Township of Neebing:

Industrial or Prison Farm Diversion.—This road was cut out, grubbed and graded 3½ miles, and gravelled ¾ mile; a bridge was built over the mouth of a creek flowing into Kaministiquia River, with steel girders 45 ft. span, and stone and concrete abutments; 3 culverts were placed.

Township of Paipoonge:

Grubbed and graded diversion road west of Stanley Junction, connecting with Arthur Street Road to Fort William and Kakabeka Falls, between lots 34 and 35, Concession 1, and across the south half of lot 13, and across lots 14 and 15, Concession 1, to Stanley Junction, a distance of 1 mile.

Township of Pearson:

Road between lots 6 and 7, Concession 5 was repaired, old crosslay removed, and the road covered with clay, for a distance of ¼ mile.

Arthur Street Road:

This road was repaired from a point ½ mile west of the Canadian Pacific Railway crossing, west to Kelly Hill, 5 miles; the road was re-graded and gravelled in places.

Schreiber:

Repaired bridge with new stringers, flooring and railing.

On the Oliver Trunk Road west of Port Arthur; road surfaced with shale.

White River:

Made rock fill across narrows in small lake about 1½ miles north of White River Station along the Canadian Pacific Railway water line; filled 125 ft. long, with 15 ft. opening; also constructed diversion around hill at south end of fill.

Port Arthur and Loon Lake Road:

This road commences at the eastern limit of the City of Port Arthur near the Pumping Station, close to the line of the Canadian Northern Railway, and extends easterly along the old Black Bay Road, which was cut out and partly graded many years ago. It follows the Black Bay Road for about 9 miles. This road almost parallels the Canadian Northern right-of-way on the north side; it also follows along the Hydro-Electric pole line between Port Arthur and the water power on the Nipigon River. The road now being constructed extends

in an easterly direction from the end of the old travelled road, crossing the Mackenzie River about ¼ mile north of the Canadian Northern Railway, and continues easterly to a point a few miles south-west of Sibley Station on the said railway. Operations ceased about the end of October at this point. The western part, or old travelled portion of the road, was widened in places and surfaced with gravel; from the end of the old travelled road, a new road was cut out, grubbed and graded; preparations were made for the erection of a bridge across the Mackenzie River. The road after it passes Mackenzie River, extends through fairly good agricultural country, although the soil is light and sandy. The country is an old brule, grown up with second growth poplar, birch, spruce, etc.; this area has been burnt over several times. From Sibley Station, the projected road extends along the edge of the Hydro-Electric pole line to Loon Lake Station on

A view on the Trunk Road from Kakabeka to Hymers, south-west of Fort William.

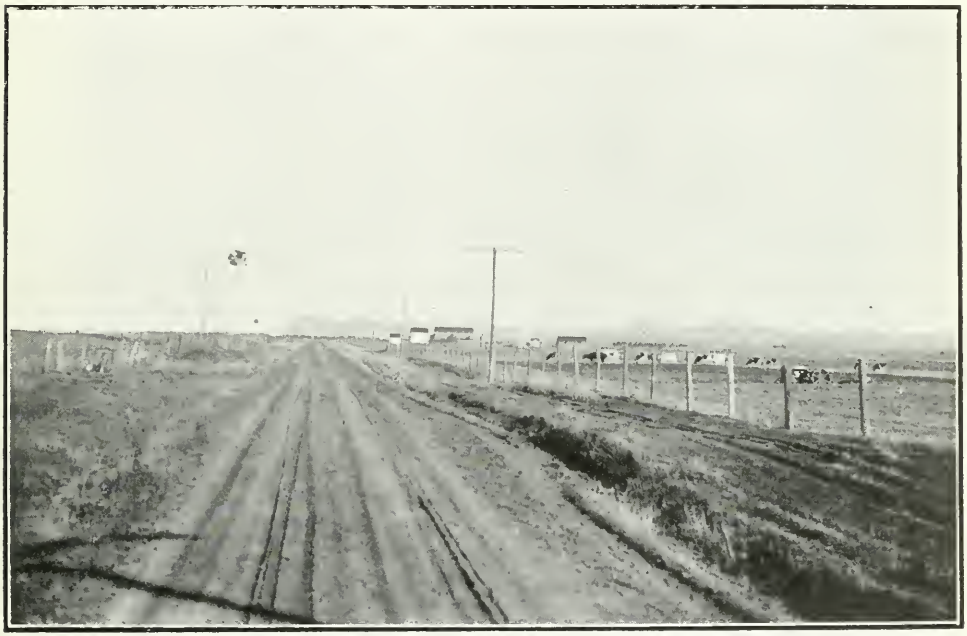
the Canadian Pacific Railway. At this point there is a large summer resort; thence the road follows in an easterly direction almost parallel to the Canadian Pacific Railway, until it reaches the agricultural section east and west of Dorion. Fourteen miles of this road were operated upon last season; about 4,000 cu. yds. of gravel were used in re-surfacing the road; several culverts were constructed. This road when completed will give access to all the fine summer resorts along the shores of Thunder Bay, Black Bay, Nipigon Bay, Nipigon River and Loon Lake; and will open up a large section of agricultural land in the Townships of Dorion, Stirling and Nipigon; and give access to the splendid water powers of Nipigon River. For some time to come, however, the benefits to be derived are more in the opening up of the agricultural section east and west of Dorion Station in the above named townships.

The total amount expended in this district during the season was $107,877.55.

KENORA DISTRICT.

Number of miles of new roads brushed out, grubbed and graded	17
" " new roads partly graded	4
" " old roads burned	10
" " old roads repaired	15
" " old roads gravelled	21
" corrugated iron culverts built	58
" wooden culverts built	35
" new bridges constructed	14
" old bridges repaired	1

During the season of 1918 the trunk road between the Town of Dryden (Canadian Pacific Railway) and Oxdrift Station, a distance of 7 miles, was ditched and graded, but not gravelled. During the months of February and March,



A view along the Trunk Road through the Slate River Valley, south-west of Fort William.

1919, the greater portion of this road was re-surfaced with gravel, 3,800 cu. yds. being used, operations ceasing on the breaking up of sleighing. This work ceased near Oxdrift Station. Early in May, operations were again started, and the gravel was spread to proper grade, and the work of grading, ditching and relocating continued westerly along the trunk road as far as Eagle River Station. The work consisted of cutting out and widening the road, cutting down hills to proper grade, building culverts, grading and diverting the road where it was found necessary, in order to avoid steep hills. The road is now well ditched and graded, but will require considerable gravel in places, before it will meet the requirements of heavy traffic during the wet seasons. In this section of the road, 32 corrugated iron culverts were placed; 15 wooden culverts and 3 small bridges constructed. Two swamps in Eton Township, 1½ miles in width, were corduroyed

and ditched on both sides, besides two offtake ditches dug, one nearly a mile in length and the other 800 ft. The distance from Oxdrift Station to Eagle River Station is 10 miles, through a splendid farming country.

While operations were being carried out to the west of Dryden, a camp was operating east of Dryden, about 1½ miles west of Wabigoon Station. The work consisted of burning off the brush on the road which was cut out the previous

A typical view of a road cut out and newly graded through the virgin forest; near Wabigoon, District of Kenora.

season, stumping, grubbing, ditching, grading and gravelling. The road is now completed through to Wabigoon, well graded, ditched and surfaced with gravel. Twenty-six corrugated iron culverts, 17 wooden culverts and 4 stone culverts were placed; and the following 6 bridges were constructed: No. 1 bridge, 75 ft. long, 8 ft. high; No. 2, 300 ft. long, 30 ft. high; No. 3, 65 ft. long, 12 ft. high; No. 4, 45 ft. long, 10 ft. high; No. 5, 36 ft. long, 8 ft. high; No. 6, 36 ft. long,

8 ft. high. These bridges are all constructed of red pine, and painted. There is now a first class gravel road between Dryden and Wabigoon, a distance of 13 miles.

Between Wabigoon and Eagle River the road passes through, in most instances, a first class farming country. The soil is chiefly clay or clay loam. The farmers are making good progress in this vicinity, judging from the large clearings and

Gravelling a new road between Dryden and Wabigoon, in the District of Kenora.

good buildings. The country appears to be best adapted for the growth of clover and alsike seed, and hundreds of acres are to be seen along the road. All classes of farm produce are grown in this District very successfully. There are still, however, thousands of acres of fine land in this Section open for settlement, or, at least, uncultivated and apparently not settled on.

Trunk Road, Vermilion Bay (Canadian Pacific Railway) North to Quibell Station (Grand Trunk Pacific Railway).

This road was constructed a few years ago, and had become badly cut up in places, owing to the heavy traffic, and required considerable repairs. The old ditches were cleaned out and deepened, 10 new culverts were placed, and one small bridge constructed. Four miles of the road were re-surfaced with gravel and 4 miles partly repaired, commencing at Vermilion Bay, going north. Owing to the wet weather, however, it was impossible to finish the work; and there remain 2 miles of the road south of Quibell badly in need of gravelling. At this point there is little or no gravel to be found, and it would be advisable to have this work completed during the winter months when the gravel could be drawn much more cheaply. The distance between Canadian Pacific Railway and Grand Trunk Pacific Railway is 10 miles.

Settler's home, Kenora District.

In the vicinity of Quibell, in the Townships of Wabigoon and Redvers, there is a section of fine agricultural land, with settlements of well-to-do farmers. The settlers, however, are badly handicapped for want of roads. Owing to the difficulty of procuring labour this summer, we did not succeed in constructing the miles of roads in this section of the country that were laid out for the season's work. During the early part of the season the farmers were all busily engaged on their farm work, and during the latter part of the season wet weather retarded the road work. This section of country, between Wabigoon and Eagle River is well adapted for the growth of timothy, clover and alsike. Large quantities of seed are grown here every year.

Aubrey Township:

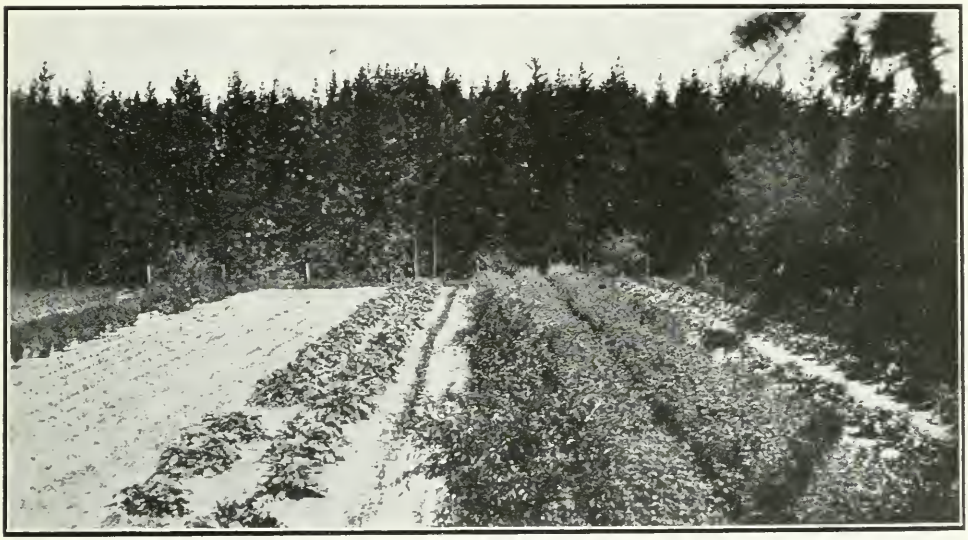
One and a half miles of road were grubbed between lots 10 and 11, Concession 6, near Minitaki Station; and a wooden bridge 96 ft. long constructed across Beaver Creek.

Pellatt Township:

Keewatin and Pellatt Trunk Road. This road, constructed a few years ago, became badly rutted in places, and was repaired where required, re-graded in places, 4 new culverts placed, ditches cleaned out and 540 yds. of gravel used in re-surfacing the worst parts.

Kenora and Keewatin Trunk Road:

This road was repaired, several dangerous places along the road were widened out and 444 loads of crushed rock were used in re-surfacing the worst parts of the road. The road is now in good condition.



A typical view of a settler's garden near Oxdrift, in the Wabigoon section, District of Kenora.

Winnipeg River Bridge:

Owing to the heavy rains during the first week in July, the waters of the Lake of the Woods rose extremely high, and caused a considerable washout at the east abutment of the steel bridge crossing the west branch of the Winnipeg River. The bridge was constructed about 18 years ago. The approach to the eastern abutment was a dry stone wall about 33 ft. high and 80 ft. long. The wall was built with very little batter, and was held together by rods of iron passing through the roadbed and bolted to timbers. The timbers rotted, and owing to the extremely high water, the entire wall slid out into the river, thus stopping communication between the two towns. A new wall was constructed 100 ft. long, well pointed with cement, and is now in first class condition.

Kenora to Redditt Station Survey:

An exploration survey was made with a view to locating a trunk road between Kenora and Redditt Station on the Grand Trunk Pacific Railway. First, a route

was explored on the East Melick trunk road to Redditt. This passed through a broken, rocky country, unsuitable for agricultural purposes in most instances, and difficult and expensive to build. The second route explored followed the West Melick trunk road, which is graded as far as lot 12, Concession 4, Township of Melick. This route was found somewhat more satisfactory than the East Melick trunk road, although it passes through a country with a comparatively small percentage of land suitable for agricultural purposes. In some instances, the country is very rocky, and a road very difficult to construct. It was found, however, that a road could be constructed connecting Redditt Station with Kenora by this route, opening up a fair percentage of agricultural land, which road might, in the future, be extended westward along the Grand Trunk Pacific Railway to connect with Minaki on the Winnipeg River.

$52,092.48 was expended on the roads in this district during the season of 1919.

A view on the Trunk Road in the Rainy River Valley.

DISTRICT OF RAINY RIVER.

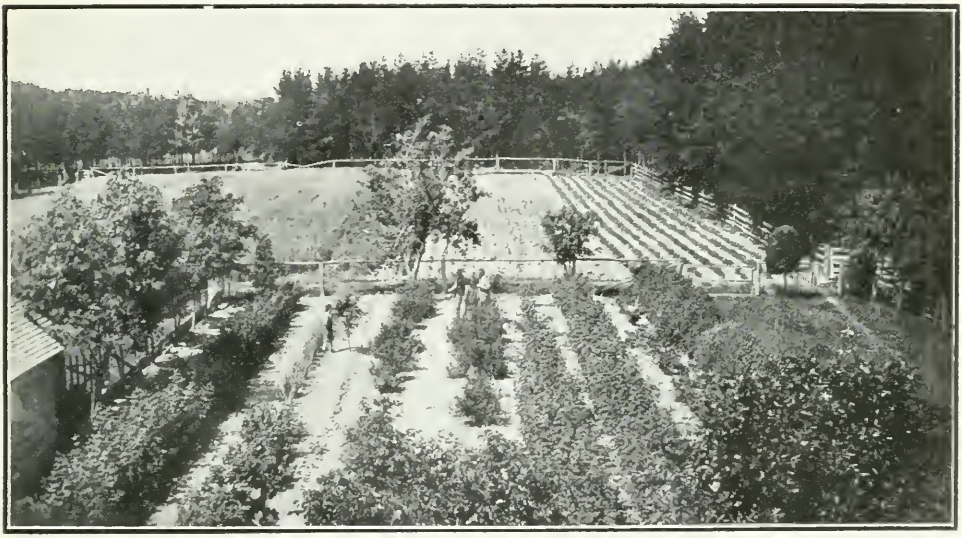
Number of miles of new roads cleared	22.5
" " old roads brushed	19.
" " roads grubbed	27.
" " new roads graded	16.
" " old roads re-graded	42.
" " roads gravelled	45.
" culverts built	76
" culverts repaired	30
" bridges built	9
" bridges repaired	5
" iron pipes laid	2
" miles of tap drains dug	4.5
" " road ditches dug	19.
" " corduroy laid	2.
Amount expended	$137.102 26

Township of McIrvine:

The road north of Section 31 was graded for 1 mile and the brush cut on the sides and tap drains cleaned out.

Township of Crozier:

The Trunk Road was gravelled north of Sections 13, 14 and 15 for a distance of 2½ miles. The Trunk Road east of Section 21 was gravelled for ¾ mile. On road between Sections 18 and 19, one mile of road was grubbed, and ½ mile ditched and graded, new. Between Sections 17 and 18, ¾ mile of road was cleared and stumped. On road north of Sections 34, 35 and 26, 2 miles of road was partly re-graded.



All kinds of garden produce flourish in the District of Kenora near Dryden.

Township of Woodyatt:

On River Road across river lots 13 to 43, 2 miles of road were gravelled by contract, 1,570 yards of gravel being used. Two and a half miles of this road were re-graded. A pile bridge, span 40 ft., was built on River Road between lots 15 and 16, and approaches filled 100 ft. Two washouts repaired on road between lots 32 and 33. Two hundred feet of filling put in at bridge between Sections 8 and 9, and 1 washout repaired on Little Fork, LaVallee Road. Two pile culverts, span 10 ft., were built on river road and 2 culverts on road between river lots 32 and 33.

Township of Devlin:

North of Sections 17 and 18, one mile of road was gravelled, and north of Section 18, 80 rods of ditch dug on one side of road; also, 2 culverts built north of Section 18 and 1 north of Section 17. North of Sections 3, 4, 5 and 6, 2 miles of road were re-graded, and north of Sections 4, 5, and 6, 2½ miles of road were gravelled by contract, 1,422 yds. of gravel being used. Two culverts built north of Section 30, and 1 north of Section 29, and 1 mile of Trunk Road

gravelled east of Section 29. On road east of Sections 27, and 34, 1½ miles of road were re-graded and 1¼ miles of the above road were gravelled by contract, 1,037 yds. of gravel being used. One-quarter mile of Trunk Road was gravelled north of Sections 29 and 30. Six hundred feet of road were gravelled north of Section 21. On road between Sections 19 and 30, ½ mile of road was cleared.

Township of Burriss:

On road east of lot 5, across Con. 3, 4, and 5, 1½ miles of road were re-graded. Two pile bridges with a span of 12 ft. were built between lots 10 and 11, Concession 1, and approaches filled in, a distance of 450 ft. at each bridge. Road across lots 5, 6, 7 and 8, between Concessions 5 and 6, 2 miles of road re-graded. One-quarter mile re-graded between lots 6 and 7, Concession 6. One and a half miles of road re-graded across lots 10, 11, and 12, Concessions 2 and 3. On road between lots 4 and 5, Concession 1, ¾ mile of road was gravelled and re-graded

Clover everywhere in the neighbourhood of Wabigoon and Dryden.

by contract, 600 yds. of gravel being used. Between lots 4 and 5, across Concessions 3, 4 and 5, 3 miles of road were gravelled by contract, 1,704 yds. of gravel being used. On road across lots 11 and 12 between Concessions 2 and 3, ¾ mile of road was gravelled by contract, 331 yds. of gravel being used.

Township of Lash:

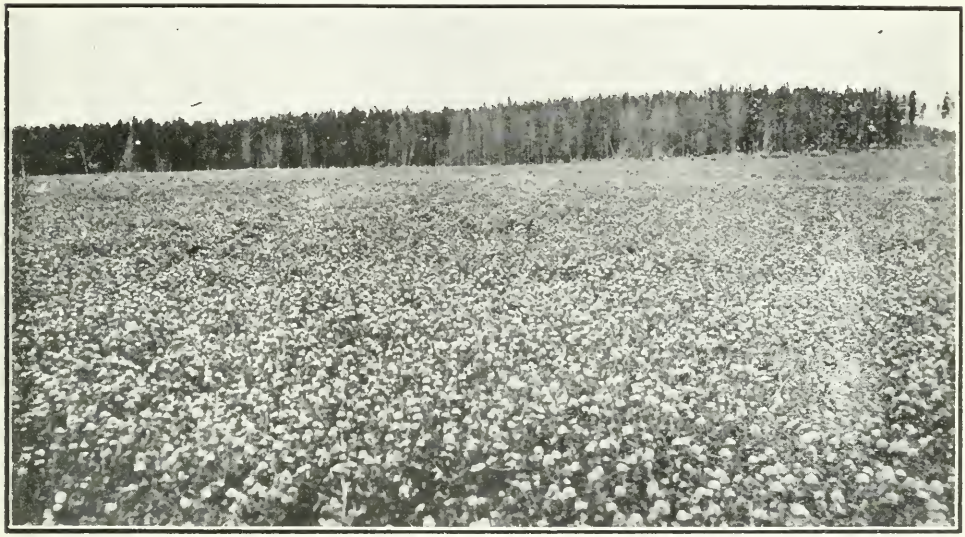
Two culverts built north of Section 26, and 2 tap drains 100 ft. in length built. On road running east and west on the north side of Emo Village, ¼ mile of road was re-graded. On river lot 38, bridge and trunk road were repaired. On road between Sections 24 and 25, ½ mile of road was cleared, and twenty rods ditched. North of Sections 25, 26, 27 and 28, 2 miles of trunk road were re-gravelled. On road between Sections 32 and 33, a culvert was built and 600 ft. tap drain dug, and on trunk road south of Section 32, 700 ft. of ditch were deepened. On road between Sections 34 and 35, ½ mile of road was gravelled.

Township of Aylsworth:

On road between river lots 32 and 33, 38 rods re-graded and ¾ mile gravelled. On river road across river lots 31, 32 and 37, 48 rods of road gravelled. On river road across river lots 30 and 31, 20 rods of road gravelled.

Township of Barwick:

One culvert built on trunk road between river lots 8 and 9. A bridge was built on road east of river lot 1, span 16 ft. On trunk road, river lot 35, a bridge was repaired. A culvert was built on trunk road on river lot 37.



Hundreds of acres of red clover and alsike are grown between Wabigoon and Eagle River, District of Kenora.

Township of Nelles:

On the road between Sections 4 and 5, and between Sections 5 and 8, 1 2/3 miles of road were gravelled. On road allowance between Sections 4 and 5, ½ mile road grubbed. On road between Sections 16 and 17, ½ mile of road graded. On road allowance between Sections 4 and 9, 70 chains ditches, and 10 chains of tap ditch dug, and ¾ mile of road cleared. On road between Sections 16 and 17, and between Sections 8 and 9, 1/3 mile of road gravelled. On road between Sections 2 and 3, 10 and 11, 14 and 15, and 22 and 23, 2¾ miles of road ditched, on one side, ½ mile double ditched, and 3½ miles re-graded. One mile of said road was grubbed on the sides and 2 culverts built; and on road between Sections 22 and 23, 10 chains of washout repaired. On road between Sections 26 and 27, and between 34 and 35, 2 miles of road re-graded..

Township of Shenston:

Cleared 147 rods road allowance around rock ridge, north of Section 35, Shenston Township. On road north of Sections 35 and 36, 280 rods of road grubbed, and 257 rods ditched and graded, and 112 rods corduroyed, 30 rods of

tap drain dug on Sections 34 and 35. On road between Sections 21 and 28, 32 rods of ditch dug. On road between Sections 26 and 27, 85 rods of road ditched, and 85 rods graded. One culvert built between lots 33 and 28. On road east of Sections 3, 10 and 15, 2½ miles of road cleared but not burned.

Township of Dilke:

Two culverts were built between Sections 32 and 33. North of Sections 35 and 36, the road was gravelled for a distance of 1¾ miles. Two culverts repaired on trunk road on river lots 32 and 41, and on trunk road across river lots 23 to 26, ½ mile of road gravelled.

A typical view of a splendid field of red clover near Wabigoon.

Township of Dobie:

On road east of lot 1, Concession 6, 1 mile of road re-graded, and brush burnt. Four culverts built, east of lot 1, on Concessions 1, 3, 4 and 6. On trunk road commencing at the S.E. corner of lot 12, Concession 1, thence easterly, 3 miles of road gravelled, 1,720 cu. yds. of gravel being used.

Township of Kingsford:

Four culverts built west of lot 12, Concession 1, and 2 on Concession 2. Four miles of road graded west of lot 12, Concessions 1, 3, 4, 5 and 6. On west town line across Concessions 3, 4, 5 and 6, 3½ miles of road brushed. On Concession 6, 202 rods of road brushed, and on Concession 4, 163 rods gravelled, and on Concession 2, 25 rods gravelled.

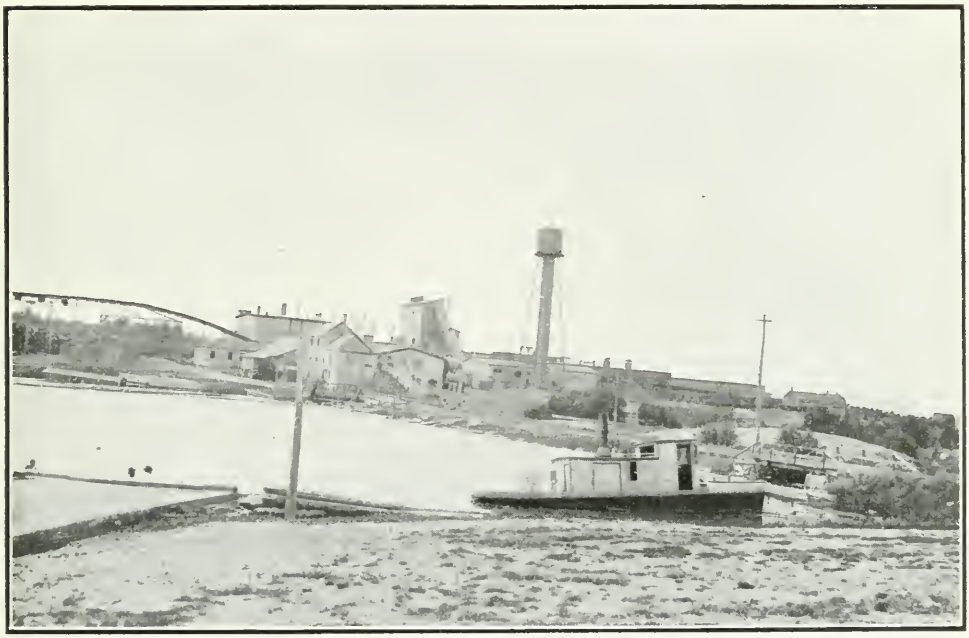
Townships of Potts:

Two and a half miles of road were grubbed and part brushed between lots 2 and 3, across Concessions 3, 4 and 5. Twenty-five rods corduroy were laid between lots 2 and 3, Concession 2, and bridge was built on lot 1. On road

between lots 8 and 9, Concessions 1 and 2, 174 rods of road gravelled, 456 rods ditched, 109 rods grubbed, 422 rods graded, 2 bridges and 7 culverts built, 195 rods of corduroy laid and 135 rods tap drain dug. Cut and cleared road allowance between lots 8 and 9, Concession 3, south half, and between Concessions 2 and 3, across lots 7 and 8, 1½ miles.

Township of Carpenter:

On road between lots 2 and 3, Concession 2, 35 rods corduroy were laid and bridge repaired. On road east of lot 1, Concession 3, 1 culvert was built and washouts filled in. On road east of lot 7, Concession 5, 200 rods of old road were re-graded and brushed, and 400 rods gravelled, and 6 rods tap drain dug. Bridge was repaired on road across lots 2 and 3, Concession 2. On road between lots



A view in the town of Dryden, District of Kenora, showing the pulp and paper mill.

6 and 7, 233 rods of road were ditched on Concession 4, and ½ mile gravelled and ¼ mile of road grubbed and graded on Concession 6 and 2 culverts built.

Township of Mather:

On road between lots 6 and 7, Concessions 5 and 6, 1 mile of road was re-graded, and 80 rods grubbed and cleared, on the sides. On road between lots 8 and 9, Concessions 5 and 6, 27 rods of road were ditched, and on Concession 3, 33 rods.

Township of Richardson:

On road between lots 2 and 3, Concession 1, 1 mile was brushed, 20 rods of tap drain dug, 60 rods of road graded, 20 rods of road grubbed, and 3 culverts

built. On road between Concessions 1 and 2, across lots 11 and 12, 148 rods were cleared. On road across lots 8, 9 and 10, between Concessions 1 and 2, 1½ miles of road were brushed. On road across lots 7 to 12, 2½ miles of road were grubbed. On road across lots 5 to 12, 3 miles of road were graded, and 95 rods of tap drain dug. On road across lots 5 and 6, between Concessions 1 and 2, 2,764 ft. of corduroy were laid and ¼ of a mile gravelled. A bridge having a span of 11 ft. was built on lot 5, between Concessions 1 and 2, and 4 culverts were put in. Between lots 4 and 5, Concessions 1 and 2, 2 culverts were repaired.

Long Sault Reserve:

On trunk road 5 miles were re-graded, 2 miles gravelled, 1,000 yds. of gravel being used, and 2 culverts repaired. On road between lots 44 and 45, the clearing, burning and grubbing was completed for 1 mile.

A garden and clover field near Dryden.

Township of Pattullo:

On road east of Sections 21, 28 and 33, 3 miles of road were re-graded, 11[illegible] rods of corduroy laid and 1 mile ditched.

Dobie-Shenston and Mather-Tait Town Line Road:

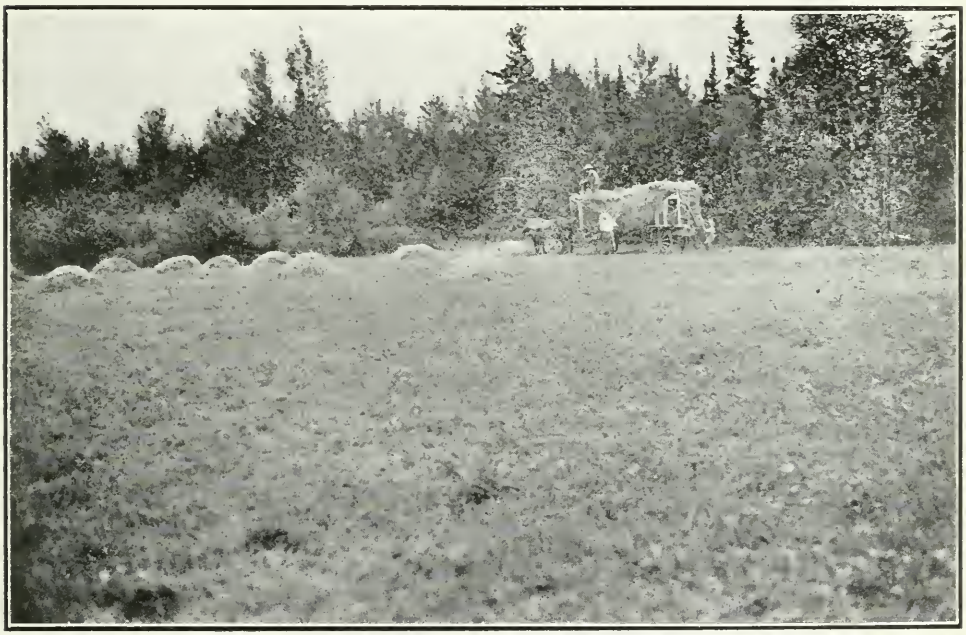
One and two-third miles of town line road were re-gravelled where washouts had damaged same, and 69 rods ditched, 2 culverts repaired, 3 new culverts built, and 25 rods re-graded. Cut and cleared road allowance east of Sections 3, 10 and 15, 1½ miles.

Township of Tait:

The approaches to bridges between Sections 22 and 23 were filled to a distance of 135 yds. On road between Sections 15 and 16, 103 yds. of road were graded. On road between Sections 15 and 16, a culvert was built. On road south of Section 4, 100 rods of ditch were dug. Two culverts were repaired on road between Sections 9 and 16, and 1 culvert between Sections 8 and 17 and 1 between lots 23 and 26. On road between Sections 9 and 10, 49 rods were graded, and between Sections 23 and 26, 23 rods.

Township of Atwood:

A culvert was built on trunk road on lot 2, and 400 ft. of trunk road gravelled across river lots 20 to 23. Two corrugated iron pipes were put in on the trunk



A "new beginner"; a settler in the Wabigoon section taking off a crop of clover.

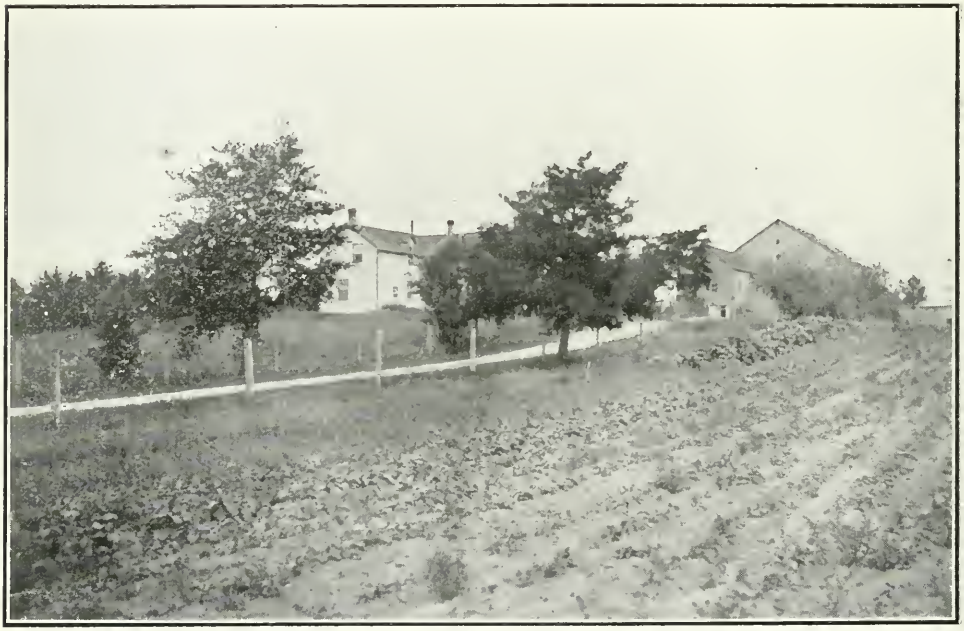
road at the Atwood and Worthington town line. On trunk road across river lots 17 and 18, ¼ mile of road was gravelled. On east side of Atwood and Worthington town line, commencing at trunk road and from there south, 1,420 ft., a ditch was dug to carry surplus water from the ditches to the north of the railway.

Township of Curran:

A culvert was built on road east of river lot 24, and ¼ mile of road gravelled; also, a culvert built on road east of Section 9.

Wild Lands Reserve:

Two new culverts were built on Spohn Trunk road east of Section 21, and 2 washouts repaired east of Sections 29, 21, 13 and 5, and 4 miles of road gravelled by contract, 4,298 yds. of gravel being used. Three and a half miles of this road were brushed and burned on sides. On road north of Section 53, ¼ mile of road was cleared, and ¼ mile grubbed. On road north of Sections 4 and 5, 2 miles of road were cleared and grubbed. On road commencing at the S.E. corner of Section 44, thence south of Sections 44, 43, 42 and 41, to road allowance on the shore of the Rainy River, thence north-westerly along said road allowance to the west boundary of Section 41, thence north on road allowance west of Sections 41, 33, 25 and 17, to the north-west corner of Section 17, 8 miles; this road allowance was cleared and grubbed by contract. On road allowance between Sections 11 and 42 and between Sections 33 and 41, 2 miles of road were cleared.



One of the many splendid farms in the Dryden section of the District of Kenora, viewed from the Trunk Road.

Manitou Reserve:

On trunk road, 3 miles were re-graded, 1½ miles gravelled, 949 yds. of gravel being used, and 3 culverts repaired.

Township of Spohn:

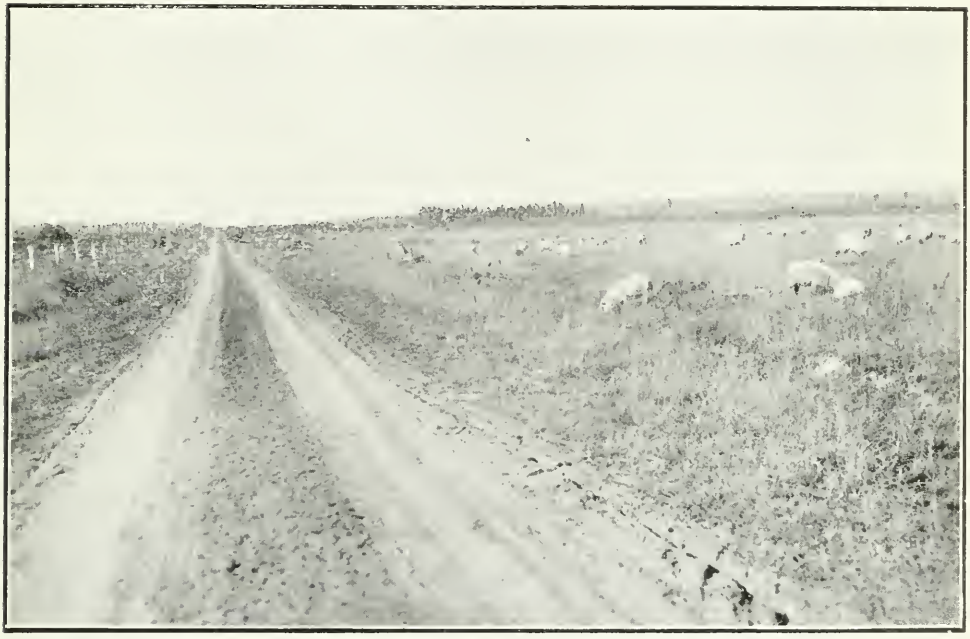
On road between lots 4 and 5, Concession 5, 1½ miles of road were ditched, and across Concessions 3 to 9 inclusive, 7 miles re-graded, and across Concessions 4, 5 and 6, 2 miles re-gravelled. On road between Concessions 7 and 8, across lots 7 and 8, 1 mile of road was cleared and the centre 12 ft. grubbed. Across the centre of lots 11 to 14, Concession 3, for a distance of 2¼ miles, a clearance was made, 33 ft. wide and a tap drain dug. On road allowance between Concessions 8 and 9, 2 miles of road were cleared.

Township of Morley:

On road north of Section 20 and 21, 2 miles of road were gravelled by contract, 1,547 yds. of gravel being used.

Township of Pratt:

On road between lots 4 and 5, across Concessions 5 and 6, and north of Concession 6, across lots 3 and 4, 3 miles of road were gravelled by contract, 5,741 cu. yds. of gravel being used.



The Fort Frances and Rainy River Trunk Road, east of Barwick, showing part of a flock of 700 sheep.

Township of McCrosson:

On road between lots 2 and 3, across Concessions 1, 2 and 3, 2½ miles were gravelled. On road between lots 2 and 3, Concession 3, and across lots 1 and 2, between Concessions 3 and 4, and east of lot 1 on town line Concessions 4 and 5, 3½ miles of road were brushed, logged and grubbed and 7,300 ft. tap drain dug, 9 culverts built and ½ mile double ditched, and 1,100 ft. single ditched, and 2¾ miles graded. On road between Concessions 2 and 3, across lots 1 and 2, 1 mile of road brushed, ½ mile grubbed, double ditched, 1 mile graded and 3 culverts built.

Township of Tovell:

On road between Concessions 2 and 3, across lots 8, 9, 10, 11 and 12, 2½ miles of road were brushed out and grubbed, and 2 miles partly graded, 1 mile double ditched and 1¼ miles single ditched, 4 new culverts built.

Township of Blue:

On road between Sections 8 and 17, 170 rods were graded, and a ditch dug on each side of road. 2 culverts built and 4 repaired; 60 rods of road repaired between Sections 20 and 11.

Township of Worthington:

On road between river lots 40 and 41 a bridge was repaired, and between Section 34 and lot 16, 6 culverts were repaired, and on the trunk road, on river lot 11, a culvert was built.

The trunk road was kept dragged from Rainy River to Fort Frances, a distance of 60 miles. The Rainy River-Spohn road was dragged 15 miles; the Sleeman-Bergland road was dragged 18 miles; the Barwick-Black Hawk road 12 miles and the Emo-Off Lake road 7 miles.

At Tracey Rapids on the Seine River about 41½ miles west of Atikokan Station, Canadian Northern Railway, a bridge was constructed in March and April. The bridge is 145 ft. long, with one rock filled pier 12 x 16, one 18 x 18, with a 50 ft. opening; one 16 x 18, with a 27 ft. opening; with an abutment, filled with rock, on the south side 7 ft. high, 20 ft. wide and 25 ft. long. Between this bridge and the Canadian Northern Railway, a road ½ mile in length was cut, grubbed and graded.

J. F. Whitson,
Commissioner.

To the Honourable the Minister of Lands and Forests:—

Sir,—I beg to submit for your consideration and recommendation that the following amounts be expended during the season of 1920 on the construction of new roads and bridges, the maintenance of previously constructed trunk roads, the re-grading and re-surfacing with stone or gravel of old roads, the drainage of swamps, and the construction of tap drains in the Districts of Rainy River, Kenora, Port Arthur, Fort William, Algoma, Sudbury, Nipissing, Parry Sound, Muskoka, Manitoulin Island, and County of Renfrew.

District of Rainy River:

In this District there are approximately 150 miles of trunk roads constructed or re-constructed during the last seven years which require to be maintained. In places they require constant dragging, ditches and culverts require to be kept open, and occasionally parts of the road require re-gravelling. In several of the townships from 10 to 20 miles north of the C. N. Railway, settlement has taken place during the last five or six years and many of these settlers have little or no access to a market, except by winter roads, and in consequence the settlers have been badly handicapped, therefore, it is necessary that new roads be constructed through these townships, connecting them with the trunk roads already built. In some instances trunk roads have been constructed north leading into these townships, which will require to be extended and the worst parts of the roads surfaced with gravel. For this purpose I would recommend the expenditure of $10,000

District of Kenora:

For repairing and maintaining old roads north and west of the Towns of Kenora and Keewatin, for the gravelling of the trunk road already constructed between Oxdrift and Eagle River Station along the C. P. Railway, for the construction of new roads in the townships adjacent to Quibell Station on the G. T. Railway, for the gravelling of sections on the trunk road between Vermilion Bay on the C. P. Railway and Quibell Station on the G. T. Railway, for repairing the road between Dryden Station on the C. P. Railway and Richan Station on the G. T. Railway; also to defray the expense of survey and exploration of new roads in the districts north and west of Kenora $15,000

Districts of Port Arthur and Fort William:

For the maintenance of 175 miles of trunk roads in the district north, east, west and south of the Towns of Port Arthur and Fort William, extending southerly to Pigeon River, westerly to the Kaministiquia River, and northerly and westerly through the settled portions of the district; to continue the trunk road commenced last season between Port Arthur and Loon Lake along the railway and east towards Nipigon $15,000

Sudbury and Algoma Districts:

The maintenance of trunk roads in the vicinity of Sudbury and throughout the mining district surrounding Sudbury, including the West Shining Tree Gold District; for the extension of a new road between Capreol Station on the C. N. Railway north of Sudbury to Sellwood Junction on the same railway, for the maintenance of the trunk road between Sudbury and North Bay, to complete the trunk road from Rutter Station on the Toronto Branch of the C. P. Railway east about 20 miles to the village of Noelville and east to Lake Nipissing, which was partly constructed last season. For the gravelling in places of the trunk road constructed in 1919 between Warren Station on the C. P. Railway, south to the Village of St. Charles $80,000

Nipissing District:

For the reconstruction and repairing of a new road between Verner on the C. P. Railway, southerly to connect with the trunk road at Noelville; for repairing the road from Sturgeon Falls on C. P. Railway, north to Field; for the completion of a road north of North Bay in the Township of Widdifield; for gravelling in places and maintenance of trunk road between North Bay and Mattawa, also the extension of the trunk road east from Powassan Station on G. T. Railway, through the Township of Chisholm $15,000

Parry Sound and Muskoka Districts:

For the completion of the North Bay and Bracebridge trunk road through the Districts of Parry Sound and Muskoka from Novar Station on the G. T. Railway, to a point south of Severn Bridge; to continue the construction of a trunk road commenced last season, running west from

Trout Creek Station on the G. T. Railway through the Village of Commanda to Loring; to continue the construction of a trunk road from Nipissing village west to Restoule; to reconstruct and gravel, in places, the road between Gordon and Foots Bay on the road from the Village of Parry Sound to Bala; to construct and repair in places the trunk road between Callander and Huntsville 132,000

County of Renfrew:

To continue the extension of the Pembroke and Mattawa trunk road from Klock on the C. P. Railway east to near Chalk River 25,000

Algoma District, Vicinity of Sault Ste. Marie:

To complete the gap between Algoma Mills and Cutler Station on the C. P. Railway; for maintenance and repairs of trunk road between Sault Ste. Marie and Sudbury; for the maintenance of trunk roads on St. Joseph Island and Campement D'Ours Island; for the completion of Goulais Bay Road and for the construction of two small bridges near Desbarats and Thessalon on the Sault Ste. Marie trunk road 83,000

Manitoulin Island:

For the completion of the trunk roads commenced three years ago between Little Current and Gore Bay and between Little Current and Manitowaning; also the extension of the trunk roads south and west of Gore Bay 25,000

Unforeseen Work:

The construction of short roads in the new settlement; building and repairing small bridges; the construction of culverts, etc. 30,000

Engineering, office expenses, surveys, exploration, machinery and equipment 30,000

$700,000

J. F. Whitson,
Commissioner.

NEW LISKEARD FARM.

The successful operation of the Farm has been very much hindered on account of lack of farm buildings. It is more imperative that the New Liskeard Demonstration Farm should have suitable buildings and farm stock if it is to fulfill the purpose for which it was established; viz., to demonstrate the most successful lines of farm work in Temiskaming District in particular, and the north country as a whole. To do this, live stock is absolutely essential, particularly in a country primarily adapted to live stock farming. I cannot too strongly recommend that steps be taken at once to prepare for the erection of buildings next summer. Operations should be commenced early in the spring in order that the buildings be ready for the first crop harvested.

One of the most important lines of work carried on during the past season has been in the clearing of additional land. In the early fall of 1918 a contract was let for clearing thirty acres. On account of the wet weather it could not be completed. During the past summer weather conditions were most favourable for land clearing and there were about seventy acres made ready for the plow; sixty on the "West" place and ten on the property in town. This was all fall plowed except ten acres on the "West" property. There are from seventy-five to eighty acres ready for crop next year.

Field Crops.

On May 31st, eight acres were seeded to O.A.C. No. 72 oats at the rate of three bushels per acre. The field had been in pasture for some years and was spring plowed. At first it was intended that the grain from this field should be used for ensilage. However, as no buildings were erected, it was allowed to ripen and was cut on September 3rd. The quality of grain was very good and the yield sixty bushels per acre. Harvest conditions prevented stacking operations and the grain was quite badly coloured. On the whole, we consider the crop a good average, especially for this year.

On June 5th, seven acres were seeded with O.A.C. No. 3, three bushels per acre. They were cut on the 15th day of August and gave a yield of fifty-five bushels per acre. The quality of these oats is better than that of the No. 72. They were cut two weeks earlier and were put in stack before the wet weather came on. The No. 3 has proven to be a splendid oat for this section.

There was a small field of new land seeded late in June. This grain did not mature and was cut and made into hay.

A small area of potatoes was planted on June 10th. The Irish Cobbler and Green Mountain were the varieties used. Results were fairly satisfactory but hardly up to the standard. The entire crop was shipped to Kapuskasing.

There was also a small acreage of turnips planted. These did much better than was expected owing to the fact that weather conditions after planting were most favourable for roots. After rain came the turnips picked up and developed into one of the best crops on the Farm. They were sold to a farmer for feed on account of lack of storage and also because we had no stock to which to feed them.

The seven acres of No. 3 oats were seeded down to hay and the catch was extra good. The nine acres where the No. 72 were grown were fall plowed for crop next year.

No other kinds of grain were grown for the reason that all hay and grain had to be stacked. Therefore we did not consider it would be good business to try out small areas of wheat, barley and other grains.

The hay crop was a really good average, yielding from one and a half to two tons per acre. It was a first crop and mostly clover.

The second growth or aftermath, was extra heavy. It matured so well that we decided to try an experiment in cutting some of it for seed. Cutting was done on November 15th. Weather conditions were very favourable at that time and we expected to get it all stacked in good shape. However, rain came on the night before we were ready to stack, consequently we had to leave it in coil for weeks before it was threshed. There was quite a percentage of seed frosted but sufficient good seed to pay all expenses in connection with the experiment.

Short Course in Agriculture and Seed Fair.

The Second Annual Short Course and Seed Fair was held for five days, March 10th to 15th.

The instructors were: W. J. Bell, B.S.A., Kemptville; Frank Marcellus, B.S.A. ,Guelph; F. C. Hart, B.S.A., Markets Branch, Toronto; A. H. McLennan, Vegetable Specialist, Toronto; W. B. Angle, New Liskeard; L. H. Hanlan, J. M. MacIntosh, A. MacLachlan, and the writer, of New Liskeard and Monteith.

The Course was arranged and conducted in a practical manner throughout. The farmers of the district took a very keen interest in the Course, also in the Fair. There was a large attendance at all lectures, especially those held in the afternoon. It seemed to be difficult for the farmers to attend both morning and afternoon lectures.

The entries in the different grain, seed and root classes were not as numerous as in 1918. This is explained by the fact that the harvest season of 1918 was less favourable than that of 1917.

Entries.

Oats	16
Wheat	23
Barley	10
Peas	12
Grasses	4
Flax	3
Potatoes	14
Total	82

Donations.

Hogg & Lytle	$25 00
Massey-Harris Co., J. T. Goldthorpe, Agent	25 00
International Harvester Co., O'Grady Bros., Agents	25 00
W. M. Gray-Sons, Campbell, Ltd., O'Grady Bros., Agents	10 00
Canadian Potato Machinery Co., O'Grady Bros., Agents	5 00
Chas. A. Julien, O'Grady Bros., Agents	15 00
Imperial Bank, silver cup.	
Union Bank, silver cup.	
J. Fleury & Sons, O'Grady Bros., Agents	17 00
Cockshutt Plow Co., Edwards Agency	15 00
Agricultural Society, New Liskeard	50 00

PRIZE WINNERS.

Class 1, O.A.C. No. 3 Oats—
1st. Chas. Thomas, Uno Park, Ont.
2nd. Jno. Molitor, Earlton, Ont.
3rd. G. J. Bray, R. R. No. 1, New Liskeard, Ont.

Section 2, O.A.C. No. 72 Oats—
1st. D. D. Taylor, Hanbury, Ont.
2nd. Bruce Kerr, New Liskeard, Ont.

Section 3, Abundance—
1st. W. R. Peters, Uno Park, Ont.
2nd. G. L. Broughton, Uno Park, Ont.

Section 4, Any Variety (White)—
1st. Geo. Stephenson, Box 412, Englehart, Ont.
2nd. A. A. Wilson, New Liskeard, Ont.
3rd. Mr. Mall, New Liskeard, Ont.

Class 2. Wheat, Marquis Spring—
1st. Geo. C. Foster, Uno Park, Ont.
2nd. Cyril Beatty, Earlton, Ont.
3rd. Mr. Mall, New Liskeard, Ont.
4th. Jno. Sharp, R. R. No. 2, New Liskeard, Ont.
5th. J. M. Gray, New Liskeard, Ont.

Section 2. Fall Wheat—
1st. A. Doupe, Hanbury, Ont.

Class 3, Barley (Any Six-rowed Variety)—
1st. Geo. C. Foster, Uno Park, Ont.
2nd. Mr. Foley, R. R. No. 1, New Liskeard, Ont.
3rd. G. Stein, New Liskeard, Ont.

Class 4, Peas, Large Field Pea—
1st. W. R. Peters, Uno Park, Ont.
2nd. P. Gouvremont, New Liskeard, Ont.
3rd. A Lusk, New Liskeard, Ont.

Section 2. Small Field Pea—
1st. A. Doupe, Hanbury, Ont.
2nd. G. Stein, New Liskeard, Ont.
3rd. Allen Merchant, Uno Park, Ont.

Class 5, Grasses, Red Clover Seed—

Section 2, Alsike Seed—
1st. B. Keetch, New Liskeard, Ont.

Section 3, Timothy Seed—
1st. A. Doupe, Hanbury, Ont.
2nd. T. H. Nickle, Hanbury, Ont.
3rd. W. R. Peters, Uno Park, Ont.

Class 6, Flax—
1st. Geo. C. Foster, Uno Park, Ont.
2nd. A Doupe, Hanbury, Ont.
3rd. J. M. Gray, New Liskeard, Ont.

Class 7, Potatoes, Irish Cobbler—
1st. W. R. Peters, Uno Park, Ont.
2nd. G. J. Bray, R. R. No. 1, New Liskeard, Ont.
3rd. Chas. Thomas, Uno Park, Ont.
4th. E. David, New Liskeard, Ont.
5th. G. A. Bassett, New Liskeard, Ont.

Section 2, Green Mountain—
1st. Geo. Stephenson, Box 412, Englehart, Ont.
2nd. J. M. Gray, New Liskeard, Ont.
3rd. E. Healey, Hanbury, Ont.

Sweepstakes—
Oats—Banner, Geo. Stephenson, Box 412, Englehart, Ont.
Wheat—Marquis, G. C. Foster, Uno Park, Ont.
Peas—Small Field Pea, A. Doupe, Hanbury, Ont.
Grasses—Timothy, A. Doupe, Hanbury, Ont.
Potatoes—Irish Cobbler, W. R. Peters, Uno Park, Ont.

The Seed Fair was carried on under the same arrangement and organization as the previous year. We are planning to hold our Third Annual Fair next year and hope for more entries than we had this year.

In conclusion, I beg to state that practically all work in connection with the Farm was done under the supervision of Mr. J. M. MacIntosh, now Agricultural Representative at Sault Ste. Marie. I succeeded Mr. MacIntosh here on September 1st, this year.

There is no doubt in my mind that a properly conducted Farm in this locality (New Liskeard) can be made to fill an important place in the Agricultural Development of Temiskaming District.

All of which is respectfully submitted.

(Sgd.) W. G. Nixon,

Superintendent.

MATHESON FARM.

There are one hundred and sixty acres in the Farm and approximately sixty cleared. The balance has been burned over and is covered with logs and stumps that can be very easily cleared.

Thus far, the Farm has been used in growing hay, grain and potatoes. The grain has been sold to settlers at moderate prices for seed purposes, when it was suitable for that.

This year a small post barn was erected in which to store hay and grain and where threshing and pressing can be done. The barn offers a very good demonstration to settlers, in that it is cheap and yet efficient. There is very little framing to it so that any handy man can build one like it. The frame is all made up of posts, braced with post girts and plank braces. It is sheeted with rough lumber and has a galvanized iron roof.

This year the Farm was cropped as follows:

Fall Wheat—
Dawson's Golden Chaff ..... 5 acres.
Spring Wheat—
Marquis Variety ..... 1 acre.
Oats—
O.A.C. No. 72 ..... 2 bushels.
O.A.C. No. 3 ..... Balance of farm.

The main crop (as stated) consisted of No. 3 oats. They were seeded on May 16th and harvested on August 11th, eighty-seven days from date of seeding.

The O.A.C. No. 72 oats were seeded on May 29th and harvested one hundred and two days later, on September 8th.

The fall and spring wheat did not give very good results. Twenty bushels of spring wheat were threshed from one acre. While this may be considered a

fair yield it is hardly up to the standard. On account of severe winter killing the fall wheat did not give a very heavy yield twenty-five bags were threshed from five acres.

The No. 3 oats are of very good quality, there are 1.098 bushels as they came from the mill.

(Sgd.) W. G. Nixon,

Farm Director.

STATEMENT OF EXPENDITURE UNDER NORTHERN AND NORTH-WESTERN ONTARIO DEVELOPMENT ACTS, 1912, 1915, AND AMENDMENTS.

(For the Year Ended 31st October, 1919.)

	District.	Expenditure.
1.	District of Nipissing, Parry Sound and Muskoka. North Bay to Callander; Callander to Washago on G. T. Ry.; Mattawa to Pembroke; Mattawa to Markstay on Canadian Pacific Railway	$199,824 47
2.	District of Temiskaming. Haileybury to Cochrane; Cochrane to Kapuskasing; Porcupine and Elk Lake	507,260 56
3.	District of Sudbury. Vicinity of the town of Sudbury and Mining District surrounding, including the West Shining Tree District; Sudbury-North Bay Trunk Road; and portion of Sault Ste. Marie-Sudbury Trunk Road	191,499 24
4.	District of Algoma (North). Vicinity of Hearst, along Transcontinental and Algoma Central Railways	20,089 29
5.	District of Algoma (South). On Sudbury and Sault Ste. Marie Trunk Road; Sault Ste. Marie to Algoma Mills, and Goulais Bay Road ..	134,705 33
6.	District of Thunder Bay. Tributary to Port Arthur and Fort William	107,877 55
7.	District of Kenora. Vicinity of Kenora and Keewatin and between Wabigoon and Dryden and Oxdrift on Canadian Pacific Railway..	52,092 48
8.	District of Rainy River. In Rainy River Valley	137,102 26
9.	Algonquin Provincial Park	102 38
10.	St. Joseph Island	22,248 67
11.	General Administration Expenses	18,457 81
12.	Experimental Farms	12,992 49
13.	Creamery, New Liskeard	7,733 07
14.	Grain Elevators	182 25
15.	Seed Grain	7,322 04
16.	Cattle Purchase Account	18,720 61
17.	Soldiers' Settlement Account	366,085 13
18.	Settlers' Loan Account	44,456 01
		$1,848,751 64

STATEMENT OF EXPENDITURE, YEAR ENDING 31ST OCTOBER, 1919.

Making of Roads:			
Grigg, A., Deputy Minister, salary	$400 00		
Whitson, J. F., Commissioner, salary	4,500 00		
Bruce, A. E. D., Secretary and Accountant, salary	3,073 25		
Beardall, F. G., Clerk, salary	1,625 06		
Lawer, W. L., Bookkeeper, salary	1,536 62		
Dower, A. R., Clerk, salary	1,164 20		
Reid, A., Draughtsman, salary	842 54		
Laidlaw, Miss B., Stenographer, salary (3 months)	291 82		
		$13,433 49	
Wages	$797,674 86		
Contracts	125,214 87		
Supplies and equipment	454,936 82		
		1,377,826 55	
		$1,391,260 04	
Advancement of Settlement and Colonization:			
Wages	8,042 26		
Contracts	913 75		
Supplies, stock and equipment	4,036 48		
		12,992 49	
Creamery, New Liskeard:			
Wages	$3,223 14		
Supplies, equipment, freight and expenses	4,509 93		
		7,733 07	

Grain Elevators, New Liskeard District:			
Preparing statistics and disbursments		$182 25	
Seed Grain:			
Wages	$93 45		
Seed, freight and expenses	7,228 59		
		7,322 04	
Cattle Purchase Account:			
Cost of cattle, feed, freight and expenses		18,720 61	
Returned Soldiers' and Sailors' Land Settlement Act:			
Wages	$155,413 91		
Contracts	26,608 03		
Material, equipment, supplies, stock, railway siding and expenses	184,063 19		
		366,085 13	
			$1,804,295 63
Settlers' Loan Department:			
Dane, F., Commissioner, salary	$5,000 00		
Kennedy, W. K. P., Accountant, salary	2,500 00		
Crawford, G., Stenographer, salary	777 50		
		8,277 50	
Net amount of loans issued	$35,470 00		
Expenses	708 51		
		36,178 51	
			44,456 01
			$1,848,751 64

ARTHUR E. D. BRUCE.
Secretary and Accountant.

SPECIAL WARRANT ACCOUNTS.

ADMINISTERED BY THE NORTHERN DEVELOPMENT BRANCH.

EXPENDITURE TO 31ST OCTOBER, 1919.

Order-in-Council dated 30th September, 1916—	
Expenses Log Houses at Toronto and Ottawa Exhibitions and at Stock Judging Pavilion, New Liskeard	$1,591 27
Order-in-Council dated 20th February, 1917—	
Expenditure	17 15
Order-in-Council dated 18th May, 1917—	
Freight	3 04
Order-in-Council dated 18th May, 1917—	
Returned Soldiers' Recreation Account—Expenditure, 1919	224 29
	$1,835 75

ARTHUR E. D. BRUCE.
Secretary and Accountant.

REVENUE ACCOUNT, 1919.

The Making of Roads:		
Refunds on the sale of supplies, etc.	$553 65	
Advancement of Settlement and Colonization:		
Sale of hay, produce, equipment, etc., and rent	395 50	
Creamery at New Liskeard:		
Butter revenue, sale of buttermilk, cans, etc.	6,922 41	
Seed Grain:		
Notes retired	13,107 78	
Purchase of Cattle Account:		
Proceeds of cattle sold	2,880 00	
Returned Soldiers' and Sailors' Land Settlement Act:		
Sale of provisions, etc.	78,668 26	
Special Warrant Accounts:		
Sales and refunds	719 95	
		$103,247 55
Settlers' Loan Account:		
Payments on principal, interest and refunds		61,772 82
Total revenue under all heads, 1919 account		$165,020 37

RECORD OF CORRESPONDENCE.

For year ended 31st October, 1919.

Letters received		8,367
Letters mailed	6,715	
Circulars mailed	1,509	
		8,224

ARTHUR E. D. BRUCE,
Secretary and Accountant.

TWENTY-EIGHTH ANNUAL REPORT

OF THE

ONTARIO BUREAU OF MINES, 1919,

BEING

VOL. XXVIII

AND CONSISTING OF PARTS I AND II

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LETTER OF TRANSMISSION

To His Honour Sir John Strathearn Hendrie, C.V.O.,

Lieutenant-Governor of the Province of Ontario.

Sir,—I have the honour to transmit to you herewith, for presentation to the Legislative Assembly of the Province of Ontario, the Twenty-eighth Annual Report of the Bureau of Mines.

I have the honour to be, Sir,

Your obedient servant.

G. H. Ferguson,
Minister of Lands, Forests and Mines.

Department of Lands, Forests and Mines,
Toronto, 1919.

INTRODUCTORY LETTER

To the Honourable George Howard Ferguson, K.C.,
Minister of Lands, Forests and Mines.

Sir,—I beg to lay before you, to be submitted to His Honour the Lieutenant-Governor in Council, the Twenty-eighth Annual Report of the Bureau of Mines, which is published in two Parts.

Part I passes in review the mining industry for the year 1918, and gives statistics regarding the output of metallic and non-metallic products, together with many details in tabular and other form.

The aggregate value of the mineral production in 1918 exceeded that of any previous year. This fact was due, for the most part, to the great war for the liberties of mankind, which came to a victorious end by the signing of the armistice on 11th November. Several of the leading minerals produced in Ontario were in great demand for war purposes. The chief of these was nickel, and hence the nickel mines of Ontario were worked to the full extent of their capacity up to the close of the struggle, the output being considerably in excess of that for 1917, previously the largest on record. Ore from the nickel mines contains copper as well, and there was a corresponding increase in the production of that metal as compared with 1917. Another necessary substance was iron pyrites, used in the manufacture of sulphuric acid for producing explosives. On account of the stoppage of importations from Spain, recourse was had by munition makers in the United States to the pyrite deposits of Ontario, mainly in the Lake Superior region, where the abundant supplies enabled them to meet their requirements. Reference in greater detail is made to these and other "war" minerals in the Statistical Review, and the effect of the war upon the several departments of mining is discussed. With the sudden coming of peace, this demand fell off greatly, and it cannot be doubted that so far as production is concerned, the result will be to materially lower the figures for 1919.

The Mining Accidents during 1918 are dealt with by T. F. Sutherland, Chief Inspector of Mines.

Under the heading Mines of Ontario, Mr. Sutherland and Assistant Inspectors E. A. Collins, J. H. Stovel and A. R. Webster describe the mines, quarries and metallurgical plants in operation during the year.

Much space is given in Part I to natural gas. The present sources of this important substance, which heats the homes and cooks the meals for about 400,000 people in the south-western peninsula of Ontario, and which is also in large use for industrial purposes, are failing. In consequence, the Legislature has adopted the policy of conserving the supply of gas, with the view of its being used, so far as possible, for domestic and not for industrial purposes. This policy was embodied in the Natural Gas Act, 1919, which took the place of the measure of the same name, passed in 1918. The legislation was preceded by a preliminary study of the gas situation, made by the Natural Gas Advisory Board appointed for the purpose, whose Report is printed in this volume.

The fuel question is always a live one in Ontario, and another aspect of it is

dealt with in a preliminary way, in Part I. by the Peat Committee. appointed jointly by the governments of Canada and Ontario. to investigate the possibilities of obtaining fuel from peat. The work of this committee will be more fully described when the experiments now being made on the Alfred peat bog are completed.

Part II of the Report is entitled "Abitibi-Night Hawk Gold Area." the authors being C. W. Knight. A. G. Burrows and P. E. Hopkins. Assistant Provincial Geologists. and Professor A. L. Parsons. of the University of Toronto. This is supplemented by notes on Larder Lake Gold Area by Mr. Hopkins. The Reports are accompanied by maps of the respective areas. Gold has been found in various places in the territory covered by the Reports. and the latter. together with the maps. will enable the areas to be prospected to better advantage.

A Bureau. entitled the Imperial Mineral Resources Bureau. has been established in London. England. for the collection of information with reference to the Mineral Resources of all parts of the Empire. and for the promotion of the development and utilization of such resources. The Governors of the Bureau consist of one representative from each of the five Dominions. Canada. Australia. New Zealand, South Africa and Newfoundland. one representing India and one the Crown Colonies. together with a chairman appointed by the British government and six representatives of the mining. metallurgical and allied interests in the United Kingdom. The representative of Canada on the Bureau is Dr. W. G. Miller. Provincial Geologist of Ontario.

I have the honour to be Sir,

Your obedient servant.

Thos. W. Gibson.

Deputy Minister of Mines.

Bureau of Mines,

Department of Lands, Forests and Mines,

Toronto. 1919.

STATISTICAL REVIEW

of the

MINERAL INDUSTRY OF ONTARIO FOR 1918

By Thos. W. Gibson, Deputy Minister of Mines

A new record was again set for the mineral industry of Ontario by the figures for 1918. In 1917 the total value of the output, metallic and non-metallic, was $72,093,832, being the highest up to that time, and exceeding the production of 1916 in value by 10.3 per cent. For the year 1918 the production had a value of $80,308,972, or 11.3 per cent. in excess of that for the previous year. Table I, printed on page 2, gives the statistics of production, including the number of employees in each branch of the industry and the wages paid them.

Examination of the tables given in this Report will show that the increase was wholly in the metallic class of minerals, and that in fact the production of non-metallic substances was less in value than that of 1917 by $1,131,062, or 8 per cent. On the other hand, metals and metal-bearing products footed up $9,346,202 more than in 1917, an increase of 16.4 per cent. This result was contributed to by higher prices in some cases, by larger production in others, and in some by both causes. Practically all the metals save gold and lead, of which latter the Ontario output is comparatively small, show an increase in value. The falling-off in gold is not great, considering the circumstances, being only $196,255, or 2.3 per cent. In lead the decrease in value was $22,760, or 15.1 per cent., and was due in part to a smaller output and in part to a lower price.

On the other hand, silver, notwithstanding a diminution in output of nearly one and three-quarters of a million ounces, or 9.8 per cent., shows a gain in value of $1,232,674, or 7.6 per cent. Copper in ore shows an increase both in quantity and value: so also do copper in matte, nickel in matte, pig iron, metallic cobalt, cobalt oxide, metallic nickel and "other" nickel and cobalt compounds. Molybdenite concentrates decreased both in quantity and value.

Metallic nickel requires a word or two of comment. The increase of 3,225,070 pounds in production and $1,170,193 in value was due almost entirely to the fact that about the middle of 1918 the newly completed nickel refinery of the International Nickel Company of Canada, Limited, at Port Colborne, came into operation. Although refined nickel had already been made in Ontario, from the cobalt-nickel-silver ores of Cobalt, it was merely as a by-product, and the quantity was small. But at the Port Colborne works is treated a considerable proportion of the nickel-copper matte into which the Sudbury ores are converted by the International Nickel Company at Copper Cliff. The matte contains about 54 per cent. of nickel and 25 per cent. of copper, the remainder being mostly sulphur and a little iron. The precious metals, gold, silver, platinum and palladium are also constituents of the matte in small quantities. Nickel is produced in shot and ingot form, and copper as blister, the latter being sent to New Jersey for refining.

TABLE I.—MINERAL STATISTICS OF ONTARIO FOR 1918.

Product.		Quantity	Value	Employees	Wages
METALLIC:			$		$
Gold	ounces	411,878	8,502,480	2,128	2,647,155
Silver	"	17,738,153	17,415,882	2,539	3,283,179
Copper	lbs.	1,211,922	270,430	3,735	7,233,289
Copper in matte (*a*)	tons	22,951	8,262,360		
Nickel in matte (*a*)	"	44,297	26,578,200		
Iron ore, exported (*b*)	"	107,273	624,364	471	615,629
Iron, pig (*c*)	"	50,072	1,364,736	851	1,241,232
Cobalt (metallic)	lbs.	404,348	887,960	643	750,237
Cobalt, oxide	"	477,583	727,170		
Nickel, oxide	"	406	106		
Nickel (metallic)	"	3,450,550	1,262,116		
Other Nickel and Cobalt compounds	"	453,515	73,347		
Lead, pig	"	1,670,251	149,841	37	41,238
Molybdenite, (concentrates)	"	47,614	59,067	92	69,907
Total Metallic			66,178,059	10,496	15,881,866
NON-METALLIC:					
Actinolite	tons	228	2,508	10	1,556
Arsenic, crude and white	lbs.	5,090,818	566,332	(*d*)	(*d*)
Barite	tons	60	900	17	12,700
Brick, fancy and pressed	M	25,377	396,698	1,027	667,715
Brick, common	"	49,498	665,454		
Brick, sand-lime	"	7,941	91,508	68	35,577
Cement, Portland	bbls.	1,226,244	1,910,839	425	423,580
Corundum	tons	137	26,120	35	13,428
Feldspar	"	19,784	111,173	138	100,302
Fluorspar	"	7,286	153,190	129	85,783
Graphite, crude and refined	,,	2,934	208,848	128	102,777
Gypsum, crushed, ground and calcined	"	38,214	151,564	71	65,574
Iron pyrites	"	270,966	1,144,737	621	707,020
Lime	bush.	2,650,285	872,177	287	300,746
Mica	tons	275	49,575	44	30,612
Mineral Water	Imp. gals.	298,498	133,808	45	20,769
Natural Gas	M. cu. ft.	13,075,742	2,498,769	872	756,225
Petroleum, crude	Imp. gals.	10,106,615	781,097	84	93,810
Pottery			88,275	22	22,061
Quartz	tons	213,420	452,711	207	187,635
Salt	"	131,726	1,287,039	302	275,842
Sand and gravel	cu. yds.	1,023,497	553,638	353	252,760
Sewer pipe			362,536	171	139,775
Stone, building (trap, granite, etc.)			869,239	631	478,070
Talc, crude and ground	tons	17,465	246,691	43	41,936
Tile, drain	M	13,087	309,899	(*e*)	(*e*)
Tile, hollow building			195,588	(*e*)	(*e*)
Total non-metallic			14,130,913	5,730	4,816,253
Add metallic			66,178,059	10,496	15,881,866
Grand Total			80,308,972	16,226	20,698,119

(*a*) Copper and Nickel in the matte valued at 18 and 30 cents per pound, respectively.
(*b*) Total shipments of iron ore, 198,882 tons. (*c*) Production from Ontario ore only. Total production of pig iron 751,650 tons, valued at $20,522,356.
(*d*) Included in the figures for Cobalt. (*e*) Included in brick.

Turning to the non-metallic list, the following show decreased production but increased value: sand-lime brick, lime, gypsum, iron pyrites, salt, sand and gravel. The following show decreases in both: arsenic, brick fancy and pressed, ditto

common, Portland cement, corundum, graphite, mica, natural gas, tile, both drain and building; pottery, sewer pipe and stone were also lower in value. The list of increases in quantity and value is short, being composed of actinolite, feldspar, fluorspar, petroleum, quartz, talc; to these may be added barite and mineral water, both of which appear for the first time in the production table. It will be noted that there was a heavy falling-off in natural gas, and a somewhat notable increase in petroleum, thus reversing the conditions prevailing in late years. The causes are touched on below.

Table II, which follows, illustrates the growth of the mineral industry of the Province during the last five years. It will be seen that the output of metals and metalliferous products has all but doubled in value within that period, while the increase in the non-metallic list has been about 9 per cent. The striking development of the metallic side of the mining industry in Ontario during the last fifteen years is shown by the fact that while in 1903 it produced a value of $5,242,575, its products in 1918 were worth $66,178,059. Ontario is now in fact pre-eminently the metal-yielding Province of the Dominion. Central Canada, which includes Ontario, is without coal mines, while the Atlantic and Pacific coasts as well as the flanks of the Rocky Mountains are rich in them. Notwithstanding this, the mineral production of Ontario per annum is now much more than double that of any of the other provinces, and in 1918 comprised 44.76 per cent. of the entire production of Canada. Of her whole output 82 per cent. is metallic in character, and 18 per cent. non-metallic.

There has been growth in the latter branch as well as the former, but on a smaller scale. In 1903 the non-metallic output of Ontario was valued at $7,628,018, while in 1918 it had grown to $14,130,913.

In Table III is given the value of the metals and metallic products produced in Ontario since mining began down to the end of 1918. Silver heads the list, nickel, pig iron, gold and copper following in this order. Since 1914 the Bureau's statistics credit pig iron only with the proportion made from Ontario ore, and only the iron ore which is exported is included. In this way duplication of the figures is avoided, and pig iron smelted from foreign ores cannot rightly be set down as a product of Ontario's mining industry. If all the pig iron turned out by the blast furnaces of the Province, regardless of the origin of the ore, and all domestic iron ore raised, whether smelted here or exported, were reckoned in, the figures for pig iron would be $122,016,716, and for iron ore $10,494,228 respectively, instead of those shown in the Table.

TABLE II.—VALUE OF MINERAL PRODUCTION, 1914 TO 1918.

Product.	1914	1915	1916	1917	1918
METALLIC:	$	$	$	$	$
Gold	5,529,767	8,501,391	10,339,259	8,698,735	8,502,480
Silver	12,795,214	12,174,312	12,703,591	16,183,208	17,415,882
Cobalt	546,479 (a)	379,657 (a)	762,327 (a)	1,122,779 (a)	1,615,130
Copper	2,081,332	3,926,018	8,365,255	7,961,662	8,532,790
Nickel	5,136,804 (b)	17,042,230 (b)	20,685,564 (b)	21,041,956 (b)	27,840,422
Other Nickel and Cobalt compounds	45,189	9,227	60,956	42,026	73,347
Iron ore (exported)	169,427	171,345	342,700	483,690	624,364
Pig iron	7,041,079 (c)	1,891,400 (c)	1,646,010 (c)	1,016,699 (c)	1,364,736
Lead (pig)	.....	.....	70,863	172,601	149,841
Molybdenite	.....	14,099	26,393	108,501	59,067
Metallic production	33,345,291	44,109,679	55,002,918	56,831,857	66,178,059
NON-METALLIC:					
Actinolite	.....	.....	.....	1,320	2,508
Arsenic	116,624	148,379	200,103	608,483	566,332
Asbestos	.....	.....	100	2,150	.....
Barite	.....	.....	.....	.....	900
Brick, common and sand-lime	2,336,207	763,591	509,559	800,983	756,962
Brick, paving, fancy	237,440	158,515	318,942	474,614	396,698
" pressed	656,944	217,350			
Calcium carbide	142,883	(d)	(d)	(a)	(d)
Cement, Portland	2,931,190	2,534,537	2,242,433	2,934,271	1,910,839
Corundum	65,730	31,398	8,763	31,213	26,120
Feldspar	55,686	47,031	42,159	81,802	111,173
Fluorspar	.....	.....	10,146	66,474	153,190
Graphite	87,167	115,274	249,586	296,587	208,848
Gypsum	221,175	190,422	116,206	130,138	151,564
Iron pyrites	264,722	353,498	471,807	1,111,264	1,144,737
Lime	333,407	244,953	265,356	657,364	872,177
Mica	40,402	33,490	55,407	92,453	49,575
Mineral Water	.....	.....	.....	.....	133,808
Natural gas	2,346,687	2,622,838	2,404,499	3,220,123	2,498,769
Peat fuel	2,100	.....	.....	.....	.....
Petroleum (crude)	337,867	300,219	387,846	475,000	781,097
Phosphate of lime	3,150	.....	.....	.....	.....
Pottery	25,720	49,387	87,025	94,501	88,275
Quartz	82,544	142,354	223,514	358,674	452,711
Salt	498,383	585,022	700,515	1,047,707	1,287,039
Sand and gravel	151,909	178,288	470,963	431,597	553,638
Sewer pipe	571,756	361,283	216,749	378,923	362,536
Stone, building, crushed, etc.	1,088,862	651,593	755,313	939,052	869,239
Talc, crude and ground	74,583	85,325	111,489	179,554	246,691
Tile, drain	277,530	321,253	275,471	546,040	309,899
" building	.....	..... (e)	176,953	(e) 301,688	(e) 195,588
Non-metallic production	12,950,668	10,136,000	10,300,904	15,261,975	14,130,913
Add metallic production	33,345,291	44,109,679	55,002,918	56,831,857	66,178,059
Total production	46,295,959	54,245,679	65,303,822	72,093,832	80,308,972

(a) Cobalt oxide and metallic cobalt.
(b) Nickel in matte, oxide and metallic nickel.
(c) Product of Ontario ore only.
(d) Raw materials not produced in Ontario.
(e) Included in former years with fancy and paving Brick.

TABLE III.—TOTAL PRODUCTION OF METALS IN ONTARIO.

Metal or Product	Total Production to 31st December, 1918
	Value, $
Gold	50,864,863
Silver	185,027,590
Platinum and Palladium	1,300,000
Cobalt, including Cobalt oxide	5,918,899
Nickel, including Nickel oxide	138,010,542
Other Cobalt and Nickel Compounds	230,745
Copper	49,947,080
Iron Ore	9,301,935
Pig Iron	78,925,917
Lead	510,595
Zinc Ore	92,410
Molybdenite	209,735
Total	520,340,311

Present Situation and Outlook

The close of the war by the signing of the armistice in November came suddenly. One effect was the immediate cessation of the demand for war materials. Of these the most important from Ontario were nickel and copper. During the period of war, especially the latter part, the Sudbury mines were worked to their maximum capacity, and all former records of production were surpassed. Large stocks of nickel had accumulated in the hands of the allied governments and their contractors for war munitions. The use of nickel having been strictly controlled for military purposes, its employment for ordinary industrial uses had been reduced to a minimum. The profound and far-reaching disturbance of the economic and manufacturing life of the world wrought by the war—to say nothing of the political and social results—was not to be remedied in a day. Though the fighting was over, peace had not been signed, and the period of waiting until terms were arranged was necessarily one of uncertainty, during which readjustments could go on but slowly. The unprecedented labour troubles which followed the war, and which yet continue, have prolonged these conditions, and it is beyond human power to predict what further throes society may have to endure, or what will be the ultimate form which the whole process of industrial production will assume. If capital is to be dethroned, or even obliged to divide its authority with labour, the re-alignment of forces will not be accomplished without difficulty, or without a season of slackening in the production of the commodities required by mankind.

By the beginning of 1919 it became clear that until the existing stocks of nickel could be absorbed or materially lessened by peace industries, there could be no object in adding to them. Consequently, the nickel mining companies allowed a number of their furnaces to go out of blast, materially reduced the hoisting of ore, and cut down their operations generally. The output for 1918 touched high water mark, the interval between the German capitulation and the end of the year not being long enough to greatly curtail production, but it may be expected that the figures for 1919 will afford a decided contrast.

Ontario "War Minerals"

Nickel and copper were not the only mineral contributions of Ontario to the allied victory. "War minerals" are of two kinds, those required for direct use in fighting, such as steel, lead, copper and nickel, and those necessary for manufacturing munitions, though not themselves actually forming part of the same. The second class includes coal and other fuels, also materials like iron pyrites and cobalt. Sulphur was required in enormous quantities for sulphuric acid necessary in making explosives, and there was a decided scarcity on this continent, due to the cutting down of shipments from Sicily, especially after the United States entered the war. The sulphur deposits of Louisiana and Texas were freely drawn upon, and Ontario owners of pyrite deposits were asked for help in making good the deficiency. The pyrite resources of this Province are very extensive, eastern, northern and northwestern Ontario containing many bodies, some of them of large size. In 1917 286,049 tons, and in 1918, 270,966 tons of iron pyrites were raised, some of which was utilized in making sulphuric acid in Ontario, but most of which was exported to the United States for the same purpose. The greatest previous production was 175,593 tons, in 1916.

Cobalt had also its war uses. The chief form in which cobalt was used until recently was the oxide, particularly in the ceramic manufacture of Europe, where it imparted the beautiful and characteristic tint known as cobalt blue. The large output of cobalt necessitated by the opening of the silver mines of Cobalt demanded new uses, and it was found that as an alloy with chromium and tungsten, called "stellite," cobalt formed a very serviceable material for tools required in cutting and machining steel. Practically all the cobalt utilized for this purpose was produced in Ontario, and an important market was supplied by the steel and munition factories of the United States and Canada. In 1917 the shipments of cobalt in the forms of oxide and metal and as stellite, from the silver refineries of the Province amounted in value to $1,122,779 and in 1918 to $1,615,130.

Another mineral called for by the exigencies of war was molybdenite, of which there are numerous occurrences[1] in Ontario. It is used as an ingredient of special tool steel, and before the war was supplied to the British steel-makers in the form of ferro-molybdenum by Germany. When this source was cut off the British authorities sent an urgent appeal to Canada, among other British countries, for molybdenite concentrates, and fixed a price per pound. Ontario responded by increasing her output of this mineral, which in 1916 amounted to 24,562 pounds, to 77,517 pounds in 1917, and 47,614 pounds in 1918. Most of this was exported to Great Britain either as concentrates or as ferro-molybdenum, the manufacture of which was undertaken at Orillia. Part of the exports went to France. It is said that the lining of the famous 75-millimetre guns so effectively used by the French in the war was of molybdenite steel.

Still another substance whose production was much stimulated by the demand arising out of war requirements was fluorspar. It has long been known that deposits of fluorspar or fluorite existed in the county of Hastings, near Madoc, but there was little production. The use of fluorspar in making steel increases the

[1] See Molybdenite Deposits of Ontario, by A. L. Parsons, Bur. Min. Rep., Vol. XXVI, 1917.

fluidity of the charge, and facilitates pouring of the furnace. The price rapidly rose and a number of the veins at Madoc were opened and worked. In 1916, the output was 1,283 tons, and in 1917, 4,327 tons. In 1918 it rose to 7,286 tons.

The mining of talc increased by reason of the war, the supplies of foreign material to the United States being cut off by the lack of shipping. Talc is used mainly as a filler in the manufacture of paper, also in rubber goods and as a cosmetic. In 1916 the production from Ontario deposits was 11,810 tons, in 1917 16,076 tons, and in 1918 17,465 tons.

On the other hand, the partial paralysis which attacked the building trade by reason of the war very greatly restricted the output of construction materials. Thus, bricks fell in number from 367,973 thousand in 1914 to 113,526 thousand in 1917, and to 80,816 thousand in 1918; Portland cement from 2,665,650 barrels in 1914 to 2,063,231 barrels in 1917 and 1,226,214 barrels in 1918; stone, for building and other purposes, from $1,088,862 worth in 1914, to $939,052 in 1917 and $869,239 in 1918. The extent to which building fell off is illustrated by the fact that while in Toronto in the year 1913 permits were given for the construction of buildings amounting in value to $27,038,000, the corresponding figures for 1916, 1917 and 1918 were only $9,882,000, $7,163,000 and $8,535,000 respectively. The present high prices of building material of all kinds, and the prevailing idea that such prices will inevitably fall in the near future, are retarding the construction of buildings. In consequence, there is a lack of dwelling houses, especially those of moderate price, in all centres of population. This lack is all the more severely felt because of the return from overseas of our citizen army, nearly one-half of whom were recruited in Ontario. Rents have gone up greatly, and the difficulties of the situation are such that the Government has been impelled to come to the aid of the people by providing funds at a low rate of interest to assist in solving the housing problem.

Reference was made in last year's Report[1] to the large number of Ontario prospectors then fighting in Europe, and the inevitable effect the continued want of prospecting would have upon the welfare, and even the existence, of the mining industry. Many hardy prospectors from the north have succumbed to the hazards of war, and others have returned with constitutions so weakened as to unfit them for their calling. But many others are again at home, ready to begin anew the search for mineral riches. With the view of affording them practical assistance in their work, the Bureau had an examination made last year of the comparatively unexplored yet fairly accessible region south and southwest of Lake Abitibi, where gold discoveries have already been made. The results of this examination, along with a geological map of the territory have already been published as Part II of this Report under the title Abitibi-Night Hawk Gold Area. The authors are C. W. Knight, A. G. Burrows, P. E. Hopkins, Assistant Provincial Geologists, and Prof. A. L. Parsons of the University of Toronto. Included in the volume are some notes on Larder Lake gold area, by Mr. Hopkins.

As for the prospects of mining in Ontario, it is never safe to prophesy. Up to the present time, the only key to the future has been the past. If experience is

[1] Rep. Bur. Min., Vol. XXVII, 1918, Part I, p. 5.

henceforth to be discarded as a guide, and the conduct of mankind to be regulated by new principles, old standards are rendered useless, and we have no basis for prognostication. But under any conceivable order of society, minerals will be indispensable. Hence they must be sought for, extracted and made fit for use. Nickel will be needed to make bridges strong, locomotives light while powerful, for electroplating, and a hundred other uses, even if battleships requiring armour for their sides cease to be built. Copper, probably next to iron the most useful metal, will still be required for a thousand purposes, and we can look with confidence for a resumption of activity in the nickel-copper mines of Sudbury. Silver will continue to please the eye with its lustre, and will probably remain the currency of the hundreds of millions in India and China and other parts of Asia. There are special difficulties in the case of gold, and unless prices of labour and commodities fall, low grade deposits in which there is now no margin of profit will cease to be worked. But in the whole list of minerals produced in Ontario, long and varied as it is, there is not one which does not subserve some interest of mankind, and which therefore can pass out of use without loss. Man being as he is, the mining industry will go on; what changes time may see in the conditions of its existence or the distribution of the fruits of its production, it would be useless to conjecture.

Gold

In 1918 the output of gold was 411,878 ounces, or a little over 2 per cent. less than in 1917. In view of the severity with which the greatly increased cost of production bears on gold mining, it is matter for surprise that the falling-off was so slight. It is a tribute to the fundamentally strong position of the northern Ontario gold mines that they were able to maintain their production at so high a level, in spite of the fact that in the nature of things it was impossible for them to pass on to the users of gold any part of the enhanced cost of producing it. The increased cost was due not only to the higher prices of all kinds of supplies, but to the scarcity, greater cost and especially the inefficiency of labour. A large proportion of the best workmen, both underground and surface, had sprung to arms in the early stages of the war, and those who remained were in the main of inferior skill and calibre. So marked was this feature, that the manager of one of the largest gold mining companies, after making a careful computation based on the quantity of work passing a given point in the mine, estimated that as compared with pre-war times, his workmen were only 60 per cent. efficient.

Table IV which follows gives the record of the producing gold mines in 1918. It should perhaps be pointed out that as regards the smaller mines where little production is shown, it would be unfair to regard the yield as an indication of the capabilities of the mine, since in nearly all cases only odd lots of ore and material taken out during development work were treated.

TABLE IV.—GOLD PRODUCTION IN 1918.

Mine	Tons ore milled	Gold Product		Silver Product		Total Value	Extraction per ton
		Fine ounces	Value	Fine ounces	Value		
			$ c.		$ c.	$ c.	$ c.
Porcupine—							
Davidson	2,537	752.04	15,544 62	35.38	34 24	15,578 86	6 22
Dome Lake	11,929	4,894.00	100,799 06	495.00	484 25	101,283 31	8 41
Dome	*	3,948.24	81,617 68	576.25	508 96	82,126 64	.....
Hollinger	578,755	276,044.73	5,706,214 35	47,850.69	46,156 52	5,752,370 87	9 90
McIntyre Porcupine	176,976	75,555.62	1,561,734 70	16,960.90	16,708 97	1,578,443 67	8 92
Newray	401	72.93	1,507 64	8.66	8 59	1,516 23	3 78
Porcupine Crown	10,907	5,978.91	123,563 42	941.28	910 90	124,474 32	11 41
Porcupine V.N.T.	15,134	3,976.94	82,203 27	687.09	664 91	82,868 18	5 48
Schumacher	19,098	4,463.40	92,260 07	660.50	581 88	92,841 95	4 86
West Dome	300	119.10	2,461 90	.....	.....	2,461 90	8 20
Total Porcupine	816,037	375,805.91	7,767,906 71	68,215.75	66,059 22	7,833,965 93	9 50
Kirkland Lake—							
Lake Shore	16,749	20,031.01	415,229 75	1,188.62	1,184 06	416,413 81	24 86
Teck-Hughes	14,774	3,869.29	79,949 48	669.52	620 73	80,570 21	5 45
Tough-Oakes	22,000	6,619.52	136,827 63	3,006.68	2,855 67	139,683 30	6 35
Total Kirkland Lake	53,523	30,519.82	632,006 86	4,864.82	4,660 46	636,667 32	11 81
Miscellaneous—							
Bourkes	3	54.53	1,090 60	22.08	22 08	1,112 68	.....
Croesus	692	3,123.90	64,555 00	254.18	224 77	64,779 77	93 61
Hill	25	30.23	635 00	.....	.....	635 00	.....
Miller Ind	.....	58.49	1,209 13	70.00	73 90	1,283 03	.....
Patricia	1,502	486.23	10,051 20	62.97	62 64	10,113 84	6 73
Pt. Colborne Ni-Cu. Refinery	.....	57.60	1,152 00	.....	.....	1,152 00	.....
Redeemer	200	8.22	170 00	.....	.....	170 00	.....
Rognon	8	2.21	45 77	.52	51	46 28	.....
St. Anthony	3,603	1,460.39	18,076 61	263.04	263 04	18,339 65	5 09
U. S. Refineries treating Cobalt ore	.....	270.00	5,581 00	.....	.....	5,581 00	.....
Total Miscellaneous	6,033	5,551.80	102,566 31	672.79	646 94	103,213 25	.....
Total	875,593	411,878.00	8,502,480 00	73,753.36	71,366 62	8,573,846 62	.....

*Clean up of mill.

Hollinger Consolidated and McIntyre Porcupine, in the Porcupine camp, were the only mills in operation for the whole of the year. The Dome crushed no ore in 1918, but carried on development work. Schumacher shut down in May, Porcupine Crown in June. Porcupine V. N. T., Dome Lake and West Dome ran for only part of the time. At Kirkland Lake, Teck-Hughes stopped work from the middle of July to the end of October, and at the Tough-Oakes no milling was done after August. On the other hand, Lake Shore began grinding ore in March, and continued at work until the close of the year. The extraction at this mine for the entire run was at the rate of $24.86 per ton.

The mines at Porcupine produced over 91 per cent. of the gold yield, those of Kirkland Lake over 7 per cent., and those in other parts of the Province over 1 per cent.

Other properties in the Porcupine area which were in operation included the Davidson in Tisdale township, owned by Davidson Gold Mines, Limited. No milling or hoisting of ore was done during the last three months of the year. Earlier 2,537 tons of ore were put through the mill, yielding 828 ounces of gold and 35 ounces of silver. A considerable amount of development work was accomplished. At the Newray, the McIntyre Porcupine Company did a small amount of work under option from the Newray Mines, Limited. Ore was raised and treated to the extent of 401 tons, which yielded about 73 ounces of gold and 8.66 ounces of silver. The Coniagas Mine, Limited, had the Maidens-McDonald and Ankerite properties under exploitation, and did a large amount of work upon them, but treated no ore.

Kirkland Lake is establishing itself as the most productive camp next to Porcupine, and the outlook for the industry there is good. At the end of the year there were five mines equipped with mills, and a sixth mill was in course of construction. Besides the properties already mentioned, the following were under active development during the year: Kirkland Lake Gold Mining Company, Limited, Burnside Gold Mines, Limited, Elliott-Kirkland Gold Mines, Limited, Kirkland-Porphyry Gold Mines, Limited, Wright-Hargreaves Mines, Limited, Ontario-Kirkland Gold Mines, Limited.

Gold Camps being Developed

The Bourkes Mines, Limited, at Bourke's siding on the T. & N. O. railway, did some 625 feet of underground work and shipped some tons of high grade ore.

At Boston Creek, the Miller Independence Mines, Limited, continued to open up their mine, in which the occurrence of tellurides is a feature, and marketed bullion containing gold and silver to the value of $1,209.13. The Patricia Syndicate carried on development operations, and also produced some 486 ounces of gold and 63 ounces of silver.

In the township of Munro the Croesus Gold Mines, Limited, ceased operations in April, after having milled 692 tons of ore and extracted therefrom 3,124 ounces of gold and 254 ounces of silver. They also shipped 13 tons of concentrate, estimated to contain 26 ounces of gold. A little farther to the east in the township of Beatty the Hill Gold Mining Company, Limited, carried on prospecting operations for six months of the year, and have a 48-ton Hardinge ball mill on the property. They milled 25 tons of ore and recovered 30 ounces of gold.

Fort Matachewan and Larder Lake are also being tested, the former by the Colorado-Ontario Development Company, Limited, and the latter by the Associated Goldfields of Ontario, Limited.

Gold having been found in 1917 near Lightning river, in the township of Holloway, the Bureau deemed it advisable to examine and map, so far as this could be done in one season, the area south and west of Lake Abitibi. Accordingly Messrs. C. W. Knight, A. G. Burrows, P. E. Hopkins and A. L. Parsons were placed in the field last year, and the result of their observations is contained in Part II of this Report and the geological map which accompanies it.

The area served by the Timiskaming and Northern Ontario railway and lying both to the west and east of the line, in the latter direction practically as far as the

Quebec boundary line, has already been shown to contain gold in many and widely scattered localities, and offers an excellent field for prospectors.

Gold was found at West Shining Tree lake in 1911, and more or less development work has been going on ever since. The Wasapika Gold Mines, Limited, are now exploring their property, and endeavouring to raise sufficient capital to carry on more extensive operations in 1919. Recently some rich gold ore was taken out of the Holding claims, Nos. T.R.S. 508 and 318, and interest in the area has been revived. Distance from railway facilities has had a tendency to retard operations in this camp, and it is hoped that this difficulty may be removed in the near future.

In the northwest part of the Province, not a great deal of work was done last year. On Contact bay, Lake Wabigoon, the workings of the Redeemer mine were unwatered and about 200 tons of ore were run through the mill as a test. In the same locality, the Rognon Gold Mines, Limited, did work of a similar kind, raising and milling about 40 tons from various parts of the mine and recovering some gold.

On Sturgeon lake, the Thunder Mining Company, Limited, operated the St. Anthony mill until August. Some 3,603 tons of ore were treated and 1,460 ounces of gold obtained, together with 263 ounces of silver.

In Eastern Ontario, a little work was done by the Ore Chimney Mining Company, Limited, at the mines of that name in the township of Barrie. No ore was raised or milled, the labour performed being in connection with the construction of an electric plant, etc. The Cobalt-Frontenac Mining Company, Limited, carried on some development work in the Golden Fleece mine, near Flinton, but treated no ore.

The list of producing gold mines is as follows:—

PRODUCING GOLD MINES, 1918.

Name of Company.	Name of Mine.	Locality.	P.O. Address of Manager, etc.
Bourkes Mines, Limited	Bourkes Mines	Benoit tp.	Bourkes.
Contact Bay Mines, Limited	Redeemer	Wabigoon Lake	Dryden.
Croesus Gold Mines, Limited	Croesus	Munro tp.	Matheson.
Davidson Gold Mines, Limited	Davidson	Porcupine	South Porcupine.
Dome Lake Mining and Milling Company, Limited	Dome Lake	Porcupine	South Porcupine.
Dome Mines Company, Limited	Dome	Porcupine	South Porcupine.
Hill Gold Mining Company, Limited	Hill	Beatty tp.	Matheson.
Hollinger Consolidated Gold Mines, Limited	Hollinger	Porcupine	Timmins.
Lake Shore Mines, Limited	Lake Shore	Kirkland Lake	Kirkland Lake.
McIntyre-Porcupine Mines, Limited	McIntyre	Porcupine	Schumacher.
Miller Independence Mines, Limited	Miller Independence	Boston Creek	Boston Creek.
Newray Mines, Limited	Newray	Porcupine	Timmins.
Patricia Syndicate,	Patricia	Boston Creek	Boston Creek.
Porcupine Crown Mines, Limited	Porcupine Crown	Porcupine	Timmins.
Porcupine V. N. T. Gold Mines, Limited	Porcupine V. N. T.	Porcupine	Timmins.
Rognon Gold Mines, Limited	Rognon	Wabigoon Lake	Dryden.
Schumacher Gold Mines, Limited	Schumacher	Porcupine	Schumacher.
Teck-Hughes Gold Mines, Limited	Teck-Hughes	Kirkland Lake	Kirkland Lake.
Thunder Mining Company, Limited	St. Anthony	Sturgeon Lake	St. Anthony Mine.
Tough-Oakes Gold Mines, Limited	Tough-Oakes	Kirkland Lake	Kirkland Lake.
West Dome Consolidated	West Dome	Porcupine	South Porcupine.

The years of the war have borne heavily upon the gold mining industry. It is not surprising that the producers of gold, which remains the basis of our financial system, should protest against the conditions which discriminated against them. They could not evade any part of the increased cost of production, nor pass it on to the consumer. Gold miners felt that if their product was essential to carrying on the affairs of the public, the public should in some way come to their relief. Hence the gold mining companies of Great Britain and the United States appealed to their respective governments to pay them a bonus on all new gold produced. These governments appointed committees to study the question, but in the end the request was refused. The ground of the refusal was not that the gold miners had no reason for complaint, but that it seemed certain the gold mines for the most part would remain in operation without a bonus.

The world's production of gold in 1918 is estimated at between 370 and 380 million dollars' worth, being a reduction as compared with 1917 of 45 or 50 million dollars, and the tendency at present seems to be toward a still further lessening of the product.

Dividends

Up to the end of 1918, there had been paid out as dividends and bonuses by the gold mining companies of Ontario the sum of $13,359,209.90, of which the amount paid out last year was $1,873,042.45.

A list of the dividend-paying mines, and the amounts paid, will be found on the opposite page.

Silver

The production of silver in 1918 amounted to 17,738,153 fine ounces, valued at $17,415,882. In quantity there was a decrease compared with 1917 of 1,741,539 ounces, or 9.7 per cent.; but in value there was an increase, owing to the higher price, of $1,232,674, or 7.6 per cent. The average per fine ounce realized by the mining companies in 1918 was $0.9818 per ounce, as compared with $0.8307 in 1917, and $0.6349 in 1916.

Financing the business of the world by ordinary peace-time methods became wholly impossible during the war, and the measures resorted to in international exchange governed the course of silver prices after the early months of 1918. The necessity of providing bullion to settle trade balances with India led to negotiations between the government of Great Britain and that of the United States, and the latter agreed to release as much of its stock of silver, amounting to $350,000,000,[1] held in Washington against silver certificates, as was required to meet these balances. The Act of Congress authorizing this was passed April 23rd. The silver, which was in the form of one-dollar coins, was sold to the British authorities at $1 per ounce and converted into bullion. Up to the end of 1918 about 160,000,000 coins had been so disposed of. By the terms of the Act the Director of the U. S. Mint was required to replace the silver by purchases at the rate of $1 per ounce whenever convenient to do so. In August the maximum price was increased to $1.015 per ounce. This action of the U. S. government saved the

[1]The silver equivalent is about 271,000,000 fine ounces.

TABLE V.—DIVIDENDS AND BONUSES PAID BY GOLD MINING COMPANIES TO DECEMBER 31, 1918.

Name of Company.	Date of Incorporation.	Authorized Capital.	Capital Stock Issued.	Par value per share.	Amount of Dividends and Bonuses paid to end of 1917	Amount of Dividends and Bonuses paid during 1918.	Rate per cent.	Total of Dividends and Bonuses paid to Dec. 31st, 1918.	Date when last Dividend or Bonus paid.
		$	$	$ c.	$	$ c.		$	
Dome Mines Company, Ltd.	Mar. 23, 1910	5,000,000	4,000,000	10 00	1,500,000 00	.....	.....	1,500,000 00	May 7, 1917
Hollinger Consolidated Gold Mines Ltd[1]	May 20, 1916	25,000,000	24,600,000	5 00	8,194,000 00	1,230,000 00	5	9,424,000 00	Dec. 31, 1918
Lake Shore Gold Mines, Ltd.	Feb. 25, 1914	2,000,000	2,000,000	1 00	.....	100,000 00	2½	100,000 00	Dec. 10, 1918
McIntyre-Porcupine Mines, Ltd.	Mar. 16, 1911	4,000,000	3,640,283	1 00	541,542 45	543,042 45	15	1,084,584 90	Nov. 30, 1918
Porcupine Crown Mines, Ltd.	May 26, 1913	2,000,000	2,000,000	1 00	840,000 00	.....	.....	840,000 00	July 15, 1917
Rea Consolidated Gold Mines	April 5, 1911	1,000,000	200,000	5 00	12,000 00	.....	.....	12,000 00	.....
Tough-Oakes Gold Mines, Ltd.	July 15, 1913	3,000,000	2,657,500	5 00	398,625 00	.....	.....	398,625 00	Dec. 27, 1916
Total	.....	.....	.....	.....	11,486,167 45	1,873,042 45	.....	13,359,209 90	

[1] Hollinger Consolidated Gold Mines, Limited, is a consolidation of the Acme Gold Mines, Limited, Millerton Gold Mines, Limited, and Hollinger Gold Mines, Limited. Dividends include $160,000 paid by Acme prior to amalgamation with Hollinger.

situation as between Britain and India, and prevented the serious complications which might otherwise have arisen by reason of the impossibility of exporting British manufactures to India in sufficient quantity while the war continued.

It is a striking fact that India exercises, in peace as well as in war, a powerful influence on the price of silver. Producing but little of this metal itself, the immense population of that country has during generations developed the habit of hoarding its savings in the form of silver ornaments and jewellery, and latterly of coined rupees. Gold, in the years preceding the war, was hoarded as well as silver; but under present conditions, gold for this or any other purpose will be difficult to obtain in India. When crops are good, India imports large quantities of silver, and the bars into which it is cast in the refineries of America and Europe are of the size, shape and weight demanded by the Indian bazaars. Comparatively little silver is exported from India, except when famine presses, as not infrequently happens. In addition to the supplies provided by the U. S. Congress, the Indian government made very large purchases of silver in London.

It seems likely that the political results of the war will lead to even an extended use of silver for currency purposes in those parts of the East which have been rescued from Turkish control. In Mesopotamia, Syria and Palestine as well as Egypt the rupee circulates freely, and it may be expected that under the improved conditions which will follow their emancipation the people of these lands will enjoy a degree of prosperity unknown before, and so will have a greater need for the medium of exchange.

The monsoon season of 1918 in India was an unfavourable one, and partial failure of crops followed. Exports of corn and wheat were prohibited, and at the close of the year the silver reserves in India, including shipments in transit, rose to 3,347 lacs (or 33,470,000) rupees as compared with 1,905 lacs (or 19,050,000) rupees at the beginning of the year. The total purchases of silver for coinage at the Indian mints during the financial year 1917-18 amounted to about 77,500,000 fine ounces.

In the early part of the year, the governments of the United States and Great Britain purchased considerable silver for coinage purposes, the latter to the extent of seven million pounds sterling, but in August the U. S. and Canadian governments prohibited all exports of silver except under license, so that no new silver was available for minting in Britain during the remainder of the year.

On 5th May, 1919, the U. S. Federal Reserve Board removed all restrictions on the export of silver, and this action was followed by a considerable increase in the price. The general expectation is that for some time to come silver will remain at a higher level than it has reached for many years.

The Ontario Output

The world's production of silver in 1918 is variously estimated at 160 million to 180 million fine ounces, of which the United States produced 67,740,000 ounces, Mexico about 40,000,000 ounces, and Canada 20,600,000 ounces.

Classified according to source, the Ontario output of 1918 was derived as follows:—

	Ounces.
Cobalt	16,807,407
Casey township	143,901
Gowganda	638,198
South Lorrain	72,188
Recovered from gold ores	73,755
Recovered from nickel-copper matte	2,704
Total	17,738,153

The largest shippers and those sending out over one million ounces were:—

	Ounces.
Nipissing	5,785,739
Kerr Lake	2,221,811
Mining Corporation of Canada	1,994,061
O'Brien	1,074,312
Coniagas	1,006,103

Mines shipping more than a quarter million but less than a million ounces were:—

	Ounces.
McKinley-Darragh-Savage	885,530
Buffalo	870,247
Miller-Lake O'Brien	631,671
Temiskaming	517,673
Beaver Consolidated	411,606
Crown Reserve	301,507
Trethewey	291,269
La Rose Consolidated	276,130

The producing mines were as given in the following list:—

PRODUCING SILVER MINES IN 1918.

Company or Owner.	Mine.	P.O. Address of Manager, etc.
Adanac Silver Mines, Limited	Adanac	Haileybury.
Aladdin Cobalt Company, Limited	Chambers-Ferland	Cobalt.
Angus, D. H.	Nipissing Reduction Mill clean-up	Cobalt.
Associated Goldfields of Western Australia, Ltd.	Keeley	Almonte.
Beaver Consolidated Mines, Limited	Beaver	Cobalt.
Buffalo Mines, Limited, The	Buffalo	Cobalt.
Casey Cobalt Silver Mining Company, Limited.	Casey-Cobalt	New Liskeard.
Cobalt Comet Mines, Limited	Drummond	Giroux Lake.
Cobalt Provincial Mining Co., Limited	Provincial	Cobalt.
Cobalt Silver Queen, Ltd.	Silver Queen	Cobalt.
Coniagas Mines, Limited	Coniagas	Cobalt.
Crews-McFarlan Mining Co.	Crews-McFarlan	Gowganda.
Crown Reserve Mining Company, Limited	Crown Reserve	Cobalt.
Dominion Reduction Co., Ltd.	Dominion	Cobalt.
Edwards & Wright, Ltd.	Green Meehan	North Cobalt.
Foster Lease (C. L. Campbell *et al*)	Foster	Giroux Lake.
Hargrave Silver Mines, Limited	Hargrave	Cobalt.
Hudson Bay Mines, Limited	Hudson Bay	Cobalt.
Kerr Lake Mining Company, Limited	Kerr Lake	Cobalt.
La Rose Mines, Limited	La Rose	Cobalt.
Lumsden Mining Co., Ltd.	Lumsden	Cobalt.
McKinley-Darragh-Savage Mines of Cobalt, Limited	McKinley-Darragh-Savage	Cobalt.

PRODUCING SILVER MINES IN 1918.—*Continued.*

Company or Owner.	Mine.	P.O. Address or Manager, etc.
Mining Corporation of Canada, Limited, The..	Cobalt Lake, Townsite-City	Cobalt.
National Mines, Limited	National	Cobalt.
Nipissing Mining Company, Limited	Nipissing	Cobalt.
O'Brien, M. J., Limited	O'Brien	Cobalt.
do	Miller-Lake O'Brien	Gowganda.
Penn-Canadian Mines, Limited.....	Penn-Canadian	Cobalt.
Peterson Lake Silver Cobalt Mining Co., Ltd....	Peterson Lake	Cobalt.
Pittsburg Lorrain Syndicate	H.R. 105, or Currie	Silver Centre.
Reliance Leasing Company	Reliance	Cobalt.
Right of Way Mines, Ltd.	Right of Way	Cobalt.
Silver Eagle Mining Co., Ltd.	.....	Silver Centre.
Temiskaming Mining Company, Limited	Temiskaming	Cobalt.
Trethewey Silver-Cobalt Mine, Limited	Trethewey	Cobalt.
Waldman Silver Mines, Ltd.	Waldman	Cobalt.

In Table VI is given the shipments of ore, concentrates and bullion from the mines of Cobalt since mining began in 1904. By "shipment" is meant consignment to outside points whether in Canada or the United States, but not movements within the camp itself, as for example, ore hauled or shipped by rail from a mine to a concentrating or sampling plant in Cobalt.

TABLE VI.—SILVER PRODUCTION, COBALT MINES, 1904 TO 1918.

Year.	No. of Producing Mines.	Shipments and Silver Contents. Ore. Tons.	Ore. Oz.	Ore. Av. per ton. Oz.	Concentrates and Residues. Tons.	Concentrates and Residues. Oz.	Concentrates and Residues. Av. per ton. Oz.	Bullion. Oz.	Total. Ounces.	Total. Value. $
1904....	4	158	206,875	1,309	.....	.....	.....	.....	206,875	111,887
1905....	16	2,144	2,451,356	1,143	.....	.....	.....	.....	2,451,356	1,360,503
1906....	17	5,335	5,401,766	1,013	.....	.....	.....	.....	5,401,766	3,667,551
1907....	28	14,788	10,023,311	677	.....	.....	.....	.....	10,023,311	6,155,391
1908....	30	24,487	18,022,480	736	1,137	1,415,395	1,244	.....	19,437,875	9,133,378
1909....	31	27,729	22,436,355	809	2,948	3,461,470	1,174	.....	25,897,825	12,461,576
1910....	41	27,437	22,581,714	821	6,845	7,082,834	1,030	980,633	30,645,181	15,478,047
1911....	34	17,278	20,318,626	1,176	9,375	8,056,189	858	3,132,976	31,507,791	15,953,847
1912....	30	10,719	15,395,504	1,436	11,214	9,768,228	871	5,080,127	30,243,859	17,408,935
1913....	35	9,861	13,668,079	1,386	11,016	8,489,321	770	7,524,575	29,681,975	16,553,981
1914....	32	4,302	6,504,753	1,511	12,152	8,915,958	733	9,742,130	25,162,841	12,765,161
1915....	24	2,865	6,758,286	2,359	11,996	10,001,548	834	7,986,700	24,746,534	12,135,816
1916....	28	2,177	4,672,500	2,146	8,561	7,598,011	887	7,644,579	19,915,090	12,643,175
1917....	28	2,288	3,271,353	1,429	13,720	6,445,243	469	8,053,318	19,401,893	16,121,013
1918....	38	1,456	1,401,050	962	17,958	5,793,756	323	10,466,888	17,661,694	17,341,790
Total ..	.....	153,024	153,114,008	1,000	106,922	77,027,953	720	60,611,926	292,385,866	169,292,351

Table VII shows the quantity and value of all the constituents of the ores mined at Cobalt from the time the mines were opened. Previous to 1914 an estimate was made of the nickel, cobalt and arsenic contents, exact figures not being obtainable, as few or no assays were made for these substances because of the mining companies not being paid for them. Since that time only the actual recoveries of these subsidiary elements are included.

TABLE VII.—TOTAL PRODUCTION, COBALT SILVER MINES, 1904 TO 1918.

Year.	Copper.		Nickel.		Cobalt.		Arsenic.		Silver.		Total Value.
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Ounces.	Value.	
		$		$		$		$		$	$
1904..	.....	.....	14	3,467	16	19,960	72	903	206,875	111,887	136,217
1905..	.....	.....	75	10,000	118	100,000	549	2,693	2,451,356	1,360,503	1,473,196
1906..	.....	.....	169	.....	321	80,704	1,440	15,858	5,401,766	3,667,551	3,764,113
1907..	.....	.....	370	1,171	739	104,426	2,958	40,104	10,023,311	6,155,391	6,301,095
1908..	.....	.....	612	.....	1,224	111,118	3,672	40,373	19,437,875	9,133,378	9,284,869
1909..	.....	.....	766	.....	1,533	94,965	4,294	61,039	25,897,825	12,461,576	12,617,580
1910..	.....	.....	504	.....	1,098	54,699	4,897	70,709	30,645,181	15,478,047	15,603,455
1911..	.....	.....	392	.....	852	170,890	3,806	74,609	31,507,791	15,953,847	16,199,346
1912..	.....	.....	429	14,220	934	314,381	4,166	80,546	30,243,859	17,408,935	17,818,082
1913..	.....	.....	377	13,326	821	420,386	3,663	64,146	29,681,975	16,553,981	17,051,839
1914..	.....	.....	(*b*) 90	28,978	(*b*) 351	590,406	2,030	116,624	25,162,841	12,765,461	13,501,469
1915..	.....	.....	(*c*) 35	28,353	(*d*) 296	383,261	2,490	148,379	24,746,534	12,135,816	12,695,809
1916..	.....	.....	(*c*) 79	59,380	(*d*) 400	805,014	2,160	200,103	19 915,090	12,643,175	13,707,672
1917..	(*a*) 53	28,840	(*c*) 155	125,071	(*d*) 337	1,138,190	2,592	608,483	19,401,893	16,121,013	18,028,597
1918..	(*a*) 72	35,712	186	156,893	388	1,640,319	2,545	566,332	17,661,694	17,341,790	19,741,037
Total.	125	64,552	4,244	449,862	9,330	6,028,710	41,334	2,090,901	292,385,866	169,292,351	177,917,37 9

(*a*) Copper is recovered from certain silver ores and concentrates shipped to United States refineries.
(*b*) Metallic contents of Nickel and Cobalt oxides respectively.
(*c*) Metals and metallic contents of all Nickel compounds.
(*d*) Metals and metallic contents of all Cobalt compounds.

Treating and Refining the Ore

Facilities for refining the ore at Cobalt have been much increased, and most of the silver now leaves the camp as bullion, produced either at the mines themselves or at local reduction works. The reducing plants at Cobalt are those of the Cobalt Reduction Company, Limited, which operates as well a mill for concentrating low grade ore, and the Dominion Reduction Company, Limited. Northern Customs Concentrators, Limited, treats ores for the mines or purchased from them, but does not produce bullion. Campbell and Deyell, Limited, have operated for a number of years a sampling plant which serves a useful purpose in the sale of ores, especially those raised by the smaller operators.

The operations of these plants for 1918 is shown in the following table:—

CUSTOM ORE SAMPLING, CONCENTRATION AND REDUCTION WORKS, 1918.

Company	Ore Sampled	Ore Treated	Concentrates produced	Silver Bullion produced	Employes	Wages
	tons	tons	tons	ounces		$
Campbell and Deyell, Ltd	2,253	.....	.....	98,317	11	14,786
Cobalt Reduction Company	.....	456	.....	1,091,570	75	256,314
Dominion Reduction Company.....	.....	58,836	3,468	238,802	79	120,604
Northern Customs Concentrators, Ltd.....	.....	55,823	1,509	.....	38	50,477
Total	2,253	115,115	4,977	1,428,689	203	442,181

In the southern part of Ontario there are four reduction works for the treatment of silver ore and concentrates from Cobalt. These are as set out in the following list, the fourth company in which treated only a small quantity of ore. The Deloro company handles mainly the product of the O'Brien and Miller-Lake O'Brien mines, the property of M. J. O'Brien, Limited, which also controls the refinery, while the Coniagas Reduction Company, Limited, refines for the most

part the ores and concentrates shipped from the Coniagas mine. Metals Chemical, Limited, ran last year mainly on residues from the Nipissing Mining Company's high grade ore refinery at Cobalt. This company aims primarily at the production of the compounds of cobalt and nickel and not at the recovery of silver. These refining companies may be listed as follows:—

REFINERS OF SILVER-COBALT ORES, 1918.

Name of Company.	Location of Works.	P.O. Address.
Deloro Smelting and Refining Co., Limited	Deloro	Deloro.
Coniagas Reduction Co., Limited	Thorold	St. Catharines.
Metals Chemical, Limited	Welland	Welland.
Standard Smelting and Refining Co., Ltd.	Chippawa	Niagara Falls.

The operations of the refining companies during 1918 are summarized in the figures given below. Apart from the silver recovered, the by-products of the Cobalt ores had a value of $2,363,535.

OPERATION OF ONTARIO SILVER-COBALT REFINERIES, 1918.

Product	Quantity	Value
		$
Ore, treated ..... tons	1,327	.....
Concentrates, treated ..... "	4,288	.....
Residue, treated ..... "	2,751	.....
Silver recovered ..... fine ounces	5,014,469	4,874,319
Arsenic, White, shipments ..... lbs.	4,240,227	524,838
Arsenic, Crude, shipments ..... "	850,591	41,494
Cobalt Oxide, shipments ..... "	477,583	727,170
Cobalt Hydroxide and Sulphate, shipments ..... "	48,513	25,180
Cobalt, Metallic, shipments ..... "	404,248	887,960
Nickel Oxide, shipments ..... "	406	106
Nickel Sulphate and Carbonate, shipments ..... "	405,263	48,165
Nickel, Metallic, shipments ..... "	272,029	108,622
Total value of products	.....	7,237,854

The number of workmen employed in the refineries was 643, and the wages paid them amounted to $750,237.

Re-treatment of Tailings

There is now little raw ore from Cobalt exported to other countries, but much of the concentrates produced and part of the residues from the treatment mills are sent to the United States for final manipulation. In the refining of concentrates obtained by oil or water flotation methods, more or less difficulty has been experienced. The flotation process has meant much for the Cobalt silver industry, since it has enabled a large percentage of the values contained in old dumps and low grade wall rock to be profitably recovered. The advance in the price of silver has also been a decided factor in lowering the minimum metallic content of material classifiable as ore. It is apparent that when

silver sells at 60 cents an ounce, rock containing on an average six ounces per ton might be on or below the profit line, while at one dollar or one dollar and ten cents an ounce, it might yield a handsome return. These two causes have combined to prolong the life of the Cobalt mines, and to enable a much larger proportion of silver to be recovered than at one time seemed possible. Several instances may be given in which old tailing piles have been worked over to advantage. The National Mines, Limited, ran from April 15 to November 6 on tailings recovered from the bed of Cross lake, on which they had been deposited by former operators of the King Edward and Silver Cliff mines situated on the shores of the lake. Of these tailings 13,244 tons were put through the flotation process and 216 tons of concentrates produced, the silver recovery from which was 59,963 ounces worth $60,359. It is recalled that at the time of these operations permission had to be obtained from the owners of the lake bed for placing thereon what was then considered to be absolutely waste material. Similarly, mill sands from the Seneca-Superior mill were run into Peterson lake, the company holding a lease of part of the land under water from the Peterson Lake company. When the vein was worked out and the lease terminated, the land reverted to the latter company, who are now treating the sands by flotation at a good profit. At the east end of the same lake, the Nova Scotia company worked a deposit on the shore, and ran the tailings into the water. When these acquired value, a dispute arose as to their ownership, but the courts decided that they were the property of the company on whose lands they lay.

The following figures have been compiled showing the products of the Cobalt mines which were treated in United States plants in 1918, and the recoveries made therefrom:—

Ore treated, tons	42.89
Concentrates treated, tons	7,835.32
Residues or slag treated, tons	555.74
Silver recovered, ounces	2,930,114
Gold recovered, ounces	204
Copper recovered, lbs.	144,763
Lead recovered, lbs.	6,116

Dividends

In dividends and bonuses the silver mining companies distributed in 1918 the sum of $4,821,513.65, making a total up to the end of that year of $74,810,521.08. Particulars are given in the Table appended. Profits of privately owned mines or close corporations are not included. These have amounted to at least five or six million dollars during the life of the camp.

TABLE VIII.—DIVIDENDS AND BONUSES PAID BY SILVER MINING COMPANIES TO DECEMBER 31, 1918.

Name of Company.	Date of Incorporation	Authorized Capital	Capital Stock Issued	Par value per share	Amount of Dividends and Bonuses paid to end of 1917	Amount of Dividends and Bonuses paid during 1918	Rate per cent.	Total of Dividends and Bonuses paid to 31st Dec., 1918	Date when last Dividend or Bonus paid
		$	$	$ c.	$	$ c.		$ c.	
Aladdin Cobalt Company, Limited	Aug. 23, 1912	500,000	500,000	5 00	.....	75,000 00	15	75,000 00	April 30, 1917
Beaver Consolidated Mines, Ltd.	Mar. 1, 1907	2,000,000	2,000,000	1 00	650,000 00	.....	....	650,000 00	April 8, 1916
Buffalo Mines, Ltd., The[1]	April 27, 1906	500,000	500,000	50	2,787,000 00	.....	....	2,787,000 00	May 28, 1914
Casey Cobalt Silver Mining Company, Ltd.	Dec. 19, 1906	100,000	100,000	1 00	203,249 33	.....	....	203,249 33	April 22, 1914
Cobalt Comet Mines, Ltd.[2]	April 16, 1913	1,000,000	1,000,000	1 00	230,000 00	.....	....	230,000 00	April 1, 1915
Coniagas Mines, Limited, The	Nov. 24, 1906	4,000,000	4,000,000	5 00	8,740,000 00	500,000 00	12½	9,240,000 00	Nov. 1, 1918
Crown Reserve Mining Co., Ltd.	Jan. 16, 1907	2,000,000	1,999,957	1 00	6,190,849 00	.....	....	6,190,849 00	Dec. 28, 1916
Kerr Lake Mining Company, Ltd.	Aug. 9, 1905	40,000	40,000	100 00	7,790,000 00	658,000 00	....	8,448,000 00	Dec. 10, 1918
La Rose Mines, Ltd.	May 31, 1908	1,500,000	1,500,000	1 00	6,270,646 84	30,000 00	2	6,300,646 84	April 20, 1918
McKinley-Darragh-Savage Mines of Cobalt Ltd.	April 17, 1906	2,500,000	2,247,692	1 00	5,146,222 74	269,723 04	12	5,415,945 78	Oct. 1, 1918
Mining Corporation of Canada, Ltd.[3]	Nov. 23, 1916	8,300,250	8,300,250	5 00	2,905,046 86	1,348,790 61	....	4,253,837 47	Dec. 14, 1918
Nipissing Mining Company, Ltd.[4]	Dec. 16, 1904	250,000	250,000	100 00	17,623,297 25	1,815,000 00	....	19,438,297 25	Oct. 21, 1918
Penn-Canadian Mines, Ltd.	April 24, 1912	1,500,000	1,349,705	1 00	175,461 65	.....	....	175,461 65	Sept. 10, 1917
Peterson Lake Silver-Cobalt Mining Co. Ltd.	April 11, 1906	3,000,000	2,401,820	1 00	462,063 35	.....	....	462,063 35	Jan. 2, 1917

Right of Way Mining Co., Ltd.	July	13, 1906	500,000	499,518	1 00	324,643 93				324,643 93	Oct.	1, 1909
Right of Way Mines, Ltd.	Sept.	11, 1909	2,000,000	1,685,500	1 60	252,825 00				252,825 00	Mar.	17, 1917
Seneca-Superior Silver Mines, Ltd.	Sept.	29, 1911	500,000	478,884	1 00	1,579,817 20				1,579,817 20	Dec.	15, 1916
Temiskaming Mining Co., Ltd.	Nov.	5, 1906	2,500,000	2,500,000	1 00	1,984,156 25	75,000 00	3		2,059,156 25	Jan.	18, 1918
Trethewey Silver Cobalt Mines, Ltd.	May June	30, 1906 1, 1911	2,000,000	1,000,000	1 00	1,111,998 50	50,000 00	5		1,161,998 50	Aug.	20, 1917
Wettlaufer Lorrain Silver Mines, Ltd.	Nov.	30, 1908	1,500,000	1,416,590	1 00	637,465 50				637,465 50	Sept.	22, 1913
City of Cobalt Mining Co., Ltd.[2]	Oct. Jan.	5, 1906 7, 1909	500,000 1,500,000	1,500,000	1 00	145,000 00				145,000 00	April	15, 1909
Cobalt Central Mines Co., Ltd.	Dec.	13, 1906	5,000,000	5,000,000	1 00	192,845 00				192,845 00	Aug.	25, 1909
Cobalt Lake Mining Co., Ltd.[5]	Dec.	22, 1906	3,000,000	3,000,000	1 00	465,000 00				465,000 00	May	29, 1914
Cobalt Silver Queen, Ltd.	April	1, 1906	1,500,000	1,500,000	1 00	315,000 00				315,000 00	Dec.	31, 1908
Cobalt Townsite Mining Co., Ltd.[5]	May	8, 1906	100,000	45,011	1 00	1,042,259 61				1,042,259 61	Nov.	11, 1914
Foster Cobalt Mining Co., Ltd.	Feb.	14, 1906	1,000,000	915,588	1 00	45,000 00				45,000 00	Jan.	1, 1907
Temiskaming and Hudson Bay Mining Co. Ltd.	July	29, 1903	25,000	7,761	1 00	1,940,250 00				1,940,250 00	Nov.	10, 1914
Hudson Bay Mines, Ltd.	July	16, 1909	3,500,000	3,200,050	5 00	778,909 42				778,909 42	Aug.	31, 1913
Total						69,989,007 43	4,821,513 65			74,810,521 08		

[1] In 1917 the capital stock of the company was reduced from $1,000,000 to $750,000 and in 1918 from $750,000 to $500,000 by returning to shareholders $250,000 in each year, leaving 1,000,000 shares issued of 50 cents each.

[2] Cash assets amounting to $50,000 paid on April 27, 1917.

[3] Mining Corporation of Canada, Limited, owns and operates the City of Cobalt, Cobalt Lake and Cobalt Townsite mines.

[4] Includes $16,288,297.25 paid in dividends by the Nipissing Mines Co. (the holding company) to the end of 1916.

[5] Now owned and operated by Mining Corporation of Canada, Limited.

Copper

The nickel-copper ores of the Sudbury area continue to be the source of practically all the copper produced in Ontario. These ores contain from 1 to 2.5 per cent. of copper, the recovery averaging year by year a little over 1.5 per cent. Copper ores not containing nickel are found in many parts of the Province, notably on the north shore of Lake Huron, where at Bruce Mines the first mine of northern Ontario was opened two generations ago. This deposit yielded in all about $3,500,000 worth of copper. After its hey-day was over, it remained idle for many years, but recently passed into the possession of the Mond Nickel Company, by whom the ore is used because of its siliceous properties. In the process of smelting the small percentage of copper which it carries is also recovered. There was one small shipment of non-nickeliferous copper ore from the Havilah mine of the Hudson Copper Company. A recovery of 144,763 pounds of copper was made in U. S. refineries from ores received from the Cobalt silver mines. The total production of copper during the year was 23,557 tons, of which 1,211,922 pounds were obtained as blister copper by the International Nickel Company of Canada in the treatment of nickel-copper matte at the Port Colborne refinery.

Nickel

Under the stimulus of war, the production of nickel in Ontario reached the highest point yet recorded. There were turned out of the converters at Copper Cliff and Coniston 87,184 tons of matte, the nickel contents of which were 45,886 tons. Of the matte 5,334 tons were treated at the International Nickel Company of Canada's refinery at Port Colborne, which went into operation in July. As compared with 1917, the nickel output of Sudbury shows an increase of 2,410 tons. The value of the nickel in the matte form was $26,578,200, an increase over 1917 of $5,634,700. The quantity of ore smelted was 1,559,892 tons, and of ore raised from the mines 1,643,040. This production was from the following mines:—

	Tons.	Tons.
International Nickel Company:—		
Creighton	1,104,673	
Crean Hill	125,836	
		1,230,509
Mond Nickel Company:—		
Garson	143,016	
Victoria No. 1	33,498	
Worthington	69,793	
Levack	97,585	
Bruce	39,021	
		382,913
Alexo Mining Company:—		
Alexo		8,618
British America Nickel Corporation:—		
Murray		21,000
Total		1,643,040

The ore raised from the Alexo mine, an extra-Sudbury deposit, was shipped as usual to the Mond Nickel Company, and smelted at the latter's works, Coniston. None of the Murray mine ore extracted by the British America Nickel Corporation was treated, this company's works not yet having been completed.

For the first three months of the year the mines and works at Copper Cliff and vicinity continued to be operated by the Canadian Copper Company, the pioneer of the nickel industry[1] in Ontario which was organized under the laws of the State of Ohio in 1886 to take over the holdings of Samuel J. Ritchie. For the remainder of the year the properties were worked by the International Nickel Company of Canada, Limited, to whom they were transferred, and in whose name also the refinery at Port Colborne is conducted, thus effecting a new amalgamation of all the Canadian interests. To the perseverance shown by the Canadian Copper Company, and the high degree of ability and technical skill which has characterized its career, it may be justly said the nickel business of this Province owes not only its origin but to a large extent its successful development.

The mines and smelters of the two operating companies, namely, the Canadian Copper Company—now the International Nickel Company of Canada, Limited—and the Mond Nickel Company, Limited, have been so often described in the Bureau's reports, that there is no necessity for referring to them here at any length. For details, the reader is referred to the Report of the Royal Ontario Nickel Commission published in 1917, which gives a full history of the origin, growth and development of the nickel industry of Ontario up to the time of publication; also to the chapter of this Report entitled Mines of Ontario. A description of the Port Colborne refinery erected by the International Nickel Company of Canada will be found on later pages of this Report in the same chapter.

The British America Nickel Corporation, in which the British Government holds a controlling interest, was steadily at work during the year in developing the Murray mine, and in erecting a smelter there and a refinery at Deschenes, Quebec. This refinery will operate the electrolytic process of recovering the nickel and copper from the matte, as developed by V. N. Hybinette in Norway.

The number of men employed in the mining, smelting and refining of nickel in Ontario last year was 3,735, to whom were paid as wages $1,233,289. The quantity of coke used at the furnaces was 197,010 tons, worth $2,772,672, and of wood, chiefly for heap-roasting purposes, 35,296 cords valued at $161,262.

From the silver ores of the Cobalt area there were recovered in the refineries at Thorold, Deloro and Welland the following nickel products, the figures being those of actual shipments:—

	Quantity. lbs.	Value. $
Nickel Oxide	406	106
" Sulphate	329,669	28,772
" Carbonate	75,594	19,393
" Metal	270,029	108,622

Adding the metallic nickel equivalent of the above to the nickel contained in the Sudbury mattes, the total production of nickel last year was 46,072 tons.

The following list gives the names and addresses of the nickel-copper mining companies carrying on active work in 1918:—

[1]See history of The Canadian Copper Company in Report of Royal Ontario Nickel Commission, pp. 60 *et seq.*; A. T. Wilgress, Printer to the King's Most Excellent Majesty, Toronto, 1917.

NICKEL-COPPER MINING COMPANIES, 1918.

Name of Company.	Name of Mine.	P.O. Address.
Alexo Mining Company, Ltd., The	Alexo	Porquis Junction.
British America Nickel Corp'n, Ltd., The	Murray	Nickelton.
Canadian Copper Company	Creighton, Crean Hill	Copper Cliff.
International Nickel Co'y of Can., Ltd.	Creighton, Crean Hill	Copper Cliff.
Mond Nickel Company, Limited, The	Garson, Levack, etc.	Coniston.

Table IX which follows shows the large development of the nickel industry during the years of the war. It will be observed that the quantity of matte produced increased by 80 per cent., the nickel contents by 101 per cent., and the copper contents by 65 per cent. The greater relative increase in nickel than in copper is doubtless due to the heavier drafts on the Creighton mine, the ore of which is high in nickel and comparatively low in copper. It might be inferred from the much larger value placed upon the nickel and copper contents from 1915 on that there had been a great increase in the price of these metals. The fact is that while in copper there was a decided advance during the war, the price rising to more than double its former figure, there was a comparatively small rise in the selling value of nickel. The large advance in value of nickel in 1915 over 1914 is due not only to an increase in output of 50 per cent., but also to an increased valuation of the nickel in the matte.

TABLE IX.—NICKEL-COPPER MINING AND SMELTING, 1914-1918.

Schedule.	1914	1915	1916	1917	1918
Ore raised.....tons.	1,000,364	1,339,322	1,572,804	1,536,828	1,643,040
Ore smelted..... "	947,053	1,272,283	1,546,215	1,453,661	1,559,892
Bessemer matte produced.. "	46,396	67,703	80,010	78,897	87,184
Nickel contents of matte .. "	22,759	34,039	41,299	41,887	45,886
Copper contents of matte... "	14,448	19,608	22,430	21,197	23,843
Value of Nickel in matte.... $	5,108,997	17,019,500	20,649,279	20,943,500	27,531,600
Value of Copper in matte... $	2,080,034	3,921,600	8,299,051	7,842,890	8,453,880
Wages paid..... $	3,131,520	3,581,639	4,920,720	5,570,587	6,861,773
Men employed .....No..	3,464	4,178	4,730	3,356	3,145

Part of the Sudbury matte production for the first time was refined within the limits of the Province, at Port Colborne. The following figures summarize the operations:—

TABLE X.—NICKEL-COPPER REFINING, 1918.

Schedule		Quantity	Value
			$
Matte refined in Ontario	tons	5,334	.....
Metallic Nickel recovered	"	1,589	1,153,494 00
Blister Copper "	"	532	234,280 00
Gold "	ounces	57.6	1,152 16
Silver "	"	2,704.3	2,724 18
Total value of Products		.....	1,391,650 34

New Nickel Areas in Ontario

The discovery of the nickel deposit known as the Alexo mine, situated in the township of Dundonald, in the Porcupine area, showed that there were nickel ores in Ontario outside of the great nickel ranges of Sudbury. The typical method of ore occurrence in the latter is at or near the contact between the norite and granite or other acid rock, geologists not being in agreement as to the manner in which the ore was deposited. The Alexo ore body is also a contact one, but the parent formation is serpentine, and that with which the contact is made is andesite. The Alexo mine has up to the end of 1918 produced about 49,132 tons of ore, which resembles the Sudbury ore in composition, being essentially a mixture of pyrrhotite and chalcopyrite, carrying nickel. Alexo ore as shipped is somewhat richer in nickel and poorer in copper than the average ores of Sudbury. Nickel ores have been found in other sections of Ontario, namely, in the township of McCart, in the township of Munro, and in the township of Strathy, Timagami Forest Reserve, and more recently it has been reported from near Lake Shebandowan in the district of Thunder Bay. Steps are being taken by the Bureau of Mines to investigate the extent of these deposits, but generally speaking, while it can be said that the ores do exist, no large and important bodies are as yet known to occur. C. W. Knight, Assistant Provincial Geologist, will be in the field during the season of 1919 in order to obtain data for a report on these extra-Sudbury deposits.

In the Sudbury area itself, a body of water known as Windy lake lies in the townships of Cascaden and Dowling, where the northern band of norite bears to the southwest. As mapped by Coleman, the norite-granite contact passes through Windy lake, and with the view of locating a possible ore body on its bed, a magnetometric survey was made on the ice last winter. The work was done by A. H. A. Robinson, of the Department of Mines, Ottawa, and C. W. Knight. The services of the former, along with the magnetometer, were courteously loaned the Bureau for the purpose by the Mines Department. At the same time a traverse and survey of the lake were made by McAuslan and Anderson, Ontario Land Surveyors; also a series of soundings to ascertain the depth of the lake. The magnetometer, however, gave no readings from which the existence of ore could be inferred.

The Ontario nickel ores are sulphides, and are undoubtedly the most important bodies of this type known to-day. In other countries, especially those which have escaped the action of glacial forces, ore bodies of the lateritic type[1] occur, some of which carry nickel. For example, Cuba, Madagascar and the island of Seboekoe, near Borneo, all tropical or sub-tropical countries with a humid climate, contain nickel ore deposits of lateritic origin, that is, ores formed by the residual decay of the parent rock, such as peridotite or serpentine, the leaching out of the non-metallic minerals, and the consequent concentration of those of a metallic character. The well-known nickel ores of New Caledonia are of this kind; so, too, are the cobalt ores of the same island.

[1]See Lateritic Ore Deposits, by W. G. Miller, Rep. Bur. Min., Vol. XXVI, 1917, pp. 318-334.

New Sources of Nickel Elsewhere

A report recently issued in the Dutch language by the Mining department of the Dutch East India government gives particulars of large lateritic iron ore deposits recently discovered in the central portion of the island of Celebes, in the Borneo archipelago. These deposits are situated in the Verbeek mountains, and are compared in composition and occurrence with those of Sebockoe above mentioned, resembling the latter in containing nickel, of which assays show from 0.27 to 0.64 per cent. It is estimated that the Verbeek deposits contain as much as 1,000 million tons of iron ore.

The report proceeds to say that hand in hand with these iron ore deposits go deposits of nickel ore. Exploration in the Verbeek mountains shows that in their origin these two groups of ore are closely connected: both arise from the same source, namely, the peridotite and serpentine rocks of that locality. The nickel ores agree in character with those of New Caledonia, and like the latter fill fissures in the friable but still solid parent rock, and also occur as ore crusts some decimeters thick overlying the upper weathered strata. For the most part they belong to the garnierite group of hydrated magnesium nickel silicates; but the brown variety known as chocolate ore also occurs. The percentage of nickel runs as high as 10 per cent. in not a few cases, and specimens containing more than 25 per cent. have been found. In general, the nickel content of the unselected ore, owing to intermixture with quartz (chalcedony), etc., is considerably lower. Two experimental pits in a nickel deposit at Soroako on the southerly shore of lake Katano gave, throughout a depth of 9 and 12 metres respectively, an average content of 2.31 and 2.50 per cent. of nickel: on Boetoh hill near by, the average content from twenty-one pits and trenches was estimated to be over 5 per cent. The total quantity of ore in the region of these experimental workings was estimated at 50,000 to 60,000 tons. It must be remembered, the report adds, that to win the 60,000 tons of ore on Boetoh hill, more than one million cubic metres of material would have to be handled. Similar occurrences are noted at other points. Up to the present, exploration has been restricted to the ridges, though there is a possibility that the ore may be found in the valleys as well. The individual hill deposits seem not to be very extensive, containing not more than a few tens of thousands of tons each; but they are probably numerous.

Nickel occurs along with copper, lead and cobalt in ore bodies now being worked by the Missouri Cobalt Company at Frederickton, Mo. These deposits are found at the contact of sandstone and limestone and are in the form of flat beds, workable for a depth of two to eight feet. The ore contains 2 to 2.5 per cent. copper, 0.5 to 0.8 per cent. nickel, 0.5 per cent. cobalt, together with lead and a little silver. All the metals are present as sulphides, and are associated with considerable pyrites. A 300-ton mill has been erected by the company, in which the ore is concentrated, four or five parts into one, by gravity concentration aided by flotation, 85 to 95 per cent. of the metals being recovered in the concentrates. The concentrates are roasted and smelted in a blast furnace, and the resulting matte is leached after roasting, the residue being converted into anodes. The copper is recovered by electrolytic refining, and the cobalt and nickel by chemical precipita-

tion. The cobalt and nickel refineries began operation about the beginning of 1919. The nickel from these works is the first produced in the United States from native ore for a number of years.

In the island of Santo Domingo, a low grade nickel deposit called the Perseverancia mine has been opened up by Cuban capitalists. The work done in 1918 was principally in building houses and making roads.

At Insizwa,[1] South Africa, sulphides carrying nickel and copper have been found under geological conditions which have suggested to some observers a resemblance to those of the Sudbury field, but as yet there has not been development enough to prove the existence of any considerable bodies of ore.

More recently accounts have been printed describing the occurrence of sulphides containing nickel and copper at Vlakfontein, No. 902, in the Rustenburg district of the Transvaal, where the geology is also said to be suggestive of that of Sudbury. A huge laccolith of red granite is represented as being surrounded by a marginal fringe of norite and basic rocks, the norites being usually about 6 miles in width, but at points spreading out to a maximum of 70 miles. On or near the marginal zone, gossan outcrops show traces of ancient workings, evidently for copper. Where shafts have been sunk on these outcrops, the general experience has been that down to 40 feet the gossan is ill-defined, and carries nothing but traces of copper with occasional blocks of unaltered sulphide ore. From this depth nickel appears in conjunction with the copper as an irregular impregnation, becoming richer at 100 feet, the greatest depth yet reached. Assays of the ore at various openings and depths show 0.57 per cent. to 3.25 per cent. of nickel and 0.25 to 6 per cent. of copper. No large amount of work has so far been done, and no important bodies of ore located.

Iron and Sulphur

The present treatment of the nickel-copper ores of Sudbury has for their chief aim the recovery of the nickel and copper contents. For this object the methods are efficient, and are carried out with much technical skill. The metallurgical plants are models of their kind, and their equipment is of the most modern type. Nevertheless, there are important constituents of the ore which go to waste. As it comes from the ground a ton of the ore contains on the average about 40 per cent. or 800 lbs. of iron, and 30 per cent., or 600 lbs. of sulphur. All of this iron and sulphur are lost. That is to say, in the 1,559,892 tons of ore which passed through the furnaces in 1918, there were 623,957 tons of metallic iron which was cast away in the slag. This is not much short of the entire annual output of pig iron from the blast furnaces of Ontario, amounting in 1918 to 751,650 tons.

The case is similar with regard to sulphur. Part of the sulphur is driven off in acrid fumes by heap-roasting in the open air, part is expelled in the smelting furnaces and converters, and part in refining the matte. But all is wasted. The Royal Ontario Nickel Commission, assuming an average of only 25 per cent. of sulphur in the ore treated, states[2] that at "the present (1917) rate of

[1]See Rep. Roy. Ont. Nickel Commission, 1917, p. R278.
[2]Report, p. 488.

production not less than 300,000 tons of sulphur, capable of producing nearly a million tons of ordinary sulphuric acid, is annually lost, and does damage through being allowed to escape."

It is not intended to suggest that these losses are intentional, or due to neglect. In the present state of metallurgy they are doubtless inevitable. If these subsidiary contents of the ore cannot be recovered at a profit, they cannot be recovered at all. Furthermore, the nickel mining companies have given much attention to the possibility of avoiding these losses, and it may be taken for granted that so far they have not found it practicable to do so. Freight charges play a large part in the problem of sulphuric acid manufacture, and the Sudbury smelters are at so great a distance from acid-consuming centres that the transportation charges would be insurmountably high, even if methods of trapping the sulphur fumes and converting them into acid were devised.

Yet it is evident that there is here an opportunity for the exercise of metallurgical skill and inventive genius. The need for thrift in the use of natural resources is becoming universally recognized, and we may hope that long ere the nickel-copper ores of Sudbury are worked out means to make use of both the iron and the sulphur will be found.

As a matter of fact the utilization of the iron contents of these ores has already made some progress. Attention was called in the Report of the Royal Ontario Nickel Commission[1] to the attempts which have been made to produce a nickel-copper steel by direct smelting. The presence of copper in steel has in the past been objected to as injurious, but this opinion is undergoing revision in the light of practical experience, since it has been shown that a small percentage of copper may not only with safety, but possibly with advantage, be carried along with nickel in a nickel-steel. Theoretically, at least, nickel-copper steel may be obtained either direct from the ore, or by re-treating the slag from nickel smelting. The latter process would not only make use of the iron, but also of the small percentages of nickel and copper remaining in the slag, and would besides avoid the waste of the precious metals entailed by smelting the ore as it comes from the mine. On the other hand the smelting of slag is more difficult in practice.

The manufacture of nickel-copper or "Ni-cu" steel has been begun by Electric Steel and Engineering at Welland, Ont. Experimental bars and sheets have been made of good quality, and even gun tubes for the British government.

The "Precious" and "Rare" Metals

Besides the two metals of principal quest, the Sudbury ores carry platinum, palladium and other metals of the platinum group, also gold and silver. The latter two, when spoken of collectively, are usually referred to as the "precious metals," and for clearness' sake, platinum, palladium, etc., may be called "rare metals." In point of value "rare metals" are at the present time worth per ounce six times as much as gold, and one hundred times as much as silver. Exact figures cannot be given for the precious and rare metal contents of the mattes produced at Sudbury, as these undoubtedly vary from year to year, being to some extent dependent upon the class of ores smelted. Certain deposits of the rocky type are richer in these

[1]Report, pp. 413-422. See also Appendix.

constituents than the more massive ore bodies, and the whole subject of the association and method of occurrence of platinum and especially of palladium, in the Sudbury ores, is as yet not thoroughly understood.

For the three years, ending in 1915, the average contents of the precious and rare metals in the Canadian Copper Company's mattes were 0.10 ounces platinum per ton, 0.15 ounces palladium, 0.05 ounces gold, and 1.75 ounces silver.[1] At this rate, the mattes produced by the Company in 1916, amounting to 56,405 tons, are estimated to have contained 5,640 ounces of platinum, 8,460 ounces of palladium,[2] 2,820 ounces of gold, and 98,709 ounces of silver. Of the precious metals, a greater proportion is actually recovered than of the rare metals. For example, in 1916, as is shown in the table on page 30, the gold recovered amounted to 3,495 ounces and the silver to 110,285 ounces, in each case considerably more than the theoretical contents based on the average of the three preceding years, while of platinum the yield was 1,016 ounces, of palladium 1,345 ounces, and of rhodium metals 257 ounces.

In the Orford process of refining, the platinum and palladium pass into the nickel and Monel metal, and are thus lost, practically only those products which are treated electrolytically in the refinery, yielding their rare metal contents. The gold and silver follow the copper, and are obtained in refining the blister metal. Recent experiments suggest the possibility of adapting electrolytic methods to the refining of nickel at certain stages of the Orford process, and if this can be successfully done, the production of the platinum group of metals from the Sudbury ores should be decidedly increased.

The Mond process of refining affords opportunity for a full recovery of these metals, which are concentrated in the residues. These are periodically removed and have in the past been disposed of to the well-known firm of Johnson, Matthey & Company, of London, by whom it was refined. Recently the Mond Company have installed in their works at Clydach, Wales, a plant for treating the residues, and henceforward will be in a position to recover the precious and rare metals themselves. Analyses show this company's mattes to be richer in both the "precious" and "rare" groups than those of the International Nickel Company, but the quantities obtained have not been reported.

It should be stated that the known ore deposits which are specially rich in the rare elements, such as Victoria, Worthington and Vermilion, are few in number, and some of them small in size, and consequently cannot be depended on for continued large production. The outlook is that future mattes may not assay so high in the rare metals as they have done in the past.

The full recovery of precious and rare metals from the mattes of the Canadian Copper Company (now the International Nickel Company) for the twelve years 1907 to 1918 was as follows:

[1] Royal Ontario Nickel Commission Report, p. 484.
[2] Ibid. p. 484.

PRECIOUS AND RARE METALS FROM CAN. COPPER COMPANY'S MATTES.

Year.	Matte Treated.	Gold.	Silver.	Platinum.	Palladium.	Rhodium Metals.
	Tons.	Ounces.	Ounces.	Ounces.	Ounces.	Ounces.
1907.....	.....	993.572	63,400.70	226.800	607.300	.....
1908.....	.....	5,238.181	139,329.29	172.316	382.287	.....
1909.....	.....	2,113.669	63,138.66	546.627	1,270.598	.....
1910.....	.....	2,649.799	60,256.83	258.325	522.804	.....
1911.....	.....	2,203.052	70,954.38	665.552	753.363	.....
1912.....	.....	2,476.558	62,169.66	496.850	680.130	.....
1913.....	37,767	2,336.405	77,924.03	192.863	207.713	191.067
1914.....	29,615	2,695.957	75,928.18	748.440	756.360	515.801
1915.....	48,770	3,444.785	101,793.17	452.430	543.240	57.475
1916.....	58,559	3,495.123	110,285.21	1,016.581	1,344.915	257.070
1917.....	59,209	1,954.934	92,963.67	970.695	1,354.459	325.407
1918.....	62,250	1,968.703	107,076.78	649.737	786.654	472.579
		31,570.738	1,025,220.56	6,597.216	9,209.823	1,819.399

Improving Electrolytic Process of Refining

Improvements have been invented in the electrolytic refining of nickel by George A. Guess, professor of metallurgy at the University of Toronto.

Prof. Guess states it is found that if an anode of crude nickel, which may contain copper and iron, is electrolyzed in a bath of nickel sulphate in which is suspended finely divided calcium carbonate, there is deposited on the cathode, which is suspended in a sack diaphragm, metallic nickel practically free from copper and iron. The copper is precipitated as a double basic sulphate of copper and nickel, which is quite insoluble. The function of the diaphragm is to protect the cathode from mechanical pollution by contact with the insoluble copper salt. Since an equivalent quantity of nickel is combined with the copper in the insoluble basic sulphate, it is obvious that the copper content of the anodes should be as low as possible. Preliminary treatment of the converter matte to remove copper is necessary. Two methods at once suggest themselves for doing this. The first is by leaching the roasted matte with dilute sulphuric acid, as is done in the preliminary operation for the Mond process. The second method would be a fusion with coke and salt cake ($Na_2 SO_4$), which is the preliminary step in the Orford process.

Experiments have been made with Prof. Guess' process at one of the Sudbury smelting plants, which are said to have been successful, and it is hoped that a more extended trial will be made. A three-fold advantage is claimed for the process; it saves time, it reduces the cost of refining, and it enables the gold, platinum, etc., to be recovered.

Iron Ore and Pig Iron

From the mines of the Province last year there were raised 251,367 tons of iron ore, of which 29,684 tons were hematite, 61,128 tons magnetite, and 160,555 tons siderite. The shipments were, to blast furnaces in Ontario, 91,609 tons, and to points in the United States, 107,273 tons, valued at $624,364. In 1917 the quantity of ore exported was 136,343 tons. The exports of ore last year were for the most part of roasted and nodulized siderite from the Magpie mine, and briquettes from the concentration plant at Moose Mountain. These mines, with the Helen, were

the chief producing properties. Small quantities of hematite were shipped by the Canadian Union Iron Mines Corporation from the Playfair mine near Fallbrook in Lanark county, and by G. Wallbridge from the dumps of the old Wallbridge mine near Eldorado in Madoc township, the ore itself having been mined eighteen years ago. The Poe Mining Company marketed 345 tons of low phosphorus magnetite raised from the Ferguson mine in Palmerston township, county of Frontenac. The principal work of the last-named company was the erection of a one-unit coarse separation plant for concentrating the ore.

The Helen Mine

The year was marked by the passing of the well-known Helen mine, owned by the Algoma Steel Corporation, which was worked out and closed down April 16th. This deposit was discovered in the fall of 1898 by Alois Goetz, and was almost immediately acquired and opened up by the late E. V. Clergue, afterwards becoming the property of the Lake Superior Power Company, of which F. H. Clergue was manager. A railway was built from Michipicoten Harbour to the mine, and shipments began in July, 1900.

The deposit has been frequently described in the Reports of the Bureau of Mines[1] and furnished most of the native ore smelted in Ontario furnaces since the time it began to produce. The Helen product, which changed from limonite to hematite as the deposit was opened up, was in demand, being of good, though non-Bessemer quality, and working well in the furnace. A peculiar feature, and one doubtless connected with the origin of the ore body, was that it contained a considerable quantity of iron pyrites, quite granular in form, which on being broken into in mining, ran like water and in consequence had to be carefully shut off for fear of contaminating the shipping ore. There was also found in the mine a decomposed dike of diabase, and an area of Keewatin schist, both of which by their decay formed deposits of kaolin, which, however, were never worked.[2] From first to last the shipments from the Helen mine were as follows, in tons of 2,000 pounds:

Transportation	Hematite	Tailings	Pyrites	Total
Lake and rail shipments	2,532,903	41,275	32,910	2,607,088
Rail shipments	247,333	1,858	19,020	268,211
Total	2,780,236	43,133	51,930	2,875,299

Beneficiation of Low Grade Ore

The fact that most of the iron ore mined in Ontario requires beneficiation before smelting has undoubtedly retarded the development of iron mining in the Province. There are very large reserves of ore in the northern and northwestern regions, but so far as the character of the deposits has been revealed, they are in the main low in metallic contents, and in some cases carry an objectionable proportion of sulphur.

[1]Vol. VIII, 1899, pp. 254-258; Vol. IX, 1900, pp. 154-164; Vol. X, 1901, pp. 191-198, etc.
[2]A. L. Parsons in Bur. Min. Rep., Vol. XXIV, 1915, pp. 192-194.

Many of these deposits are contained in ranges of banded ore, composed principally of magnetite, but frequently carrying hematite as well. In these layers iron ore alternates with layers of silica or jasper, such layers varying in thickness from that of leaves in a book to a foot or several feet. The intermixture of iron and silica being intimate, fine grinding is necessary before any method of magnetic concentration can be employed, and complete separation between the particles of ore and those of silica is difficult.

Siderite also occurs in large bodies, and by roasting and nodulizing can be converted into first-class furnace material. In eastern Ontario there are many deposits, chiefly of magnetic ore. A considerable number of these have been worked, but the production has never been large.

Government Aid Asked for

The conditions of iron mining in Ontario are such as to lead to a demand for some sort of government aid in order to bring about the establishment of a permanent industry, and representations have been made both at Ottawa and Toronto in favour of such assistance. The fact is that at the present time the proportion of native Canadian ores charged into the blast furnaces of the whole of Canada last year was only 4.3 per cent., practically all the ore used being imported from Newfoundland and the mines of the Lake Superior region south of the international boundary line. Undoubtedly, the iron ore deposits of Ontario will be called upon, and it may be at no distant date; but for the present it is difficult to induce iron masters to turn from the beaten path of imported ore and make experiments with what they regard as uncertain sources of supply both as to quantity and kind.

Following is a list of the iron mines from which ore was shipped in 1918:—

IRON ORE MINING COMPANIES, 1918.

Company or Firm.	Mine.	Location.	Kind of Ore.	P.O. Address of Company.
Algoma Steel Corporation, Ltd.	Helen	Michipicoten	Hematite	Sault Ste. Marie
Algoma Steel Corporation, Ltd.	Magpie	Algoma dist.	Siderite	Sault Ste. Marie
Canadian Union Iron Mines Corporation, Ltd.	Playfair	Fallbrook, Lanark county	Hematite	Montreal, Que., 145 St. James St.
Moose Mountain, Ltd.	Moose Mountain	Sudbury dist.	Magnetite	Sellwood
Poe Mining Company	Ferguson	Palmerston tp.	Low-Phos. Magnetite	Clarendon Station
Wallbridge, G.	Wallbridge	Madoc tp.	Hematite	Madoc

The production of pig iron reached in 1918 the highest point yet recorded, the quantity being 751,650 tons, valued at $20,522,356, as compared with 691,233 tons, worth $14,201,695, in 1917. The increase in quantity produced was thus 8.7 per cent., while the value rose by over 44 per cent., the average price per ton increasing from $20.54 to $27.30. War requirements and the difficulty of procuring supplies of pig iron in the United States contributed to this enlarged production at home. Out

of a total of 1,400,085 tons of ore smelted, only 99,852 tons, or 6.65 per cent., were of Ontario origin, the remainder consisting of ore imported from the United States.

The producing companies are shown on the list given below. In all nine blast furnaces were in operation during the year. More than one-half the total quantity of pig iron was produced by the Algoma Steel Corporation at Sault Ste. Marie. The pig iron and steelmaking capacity of the Province is being added to by the plant of the Canadian Steel Corporation, Limited, now under construction at Ojibway, near Windsor.

IRON BLAST FURNACES IN OPERATION, 1918.

Name of Company.	No. of Furnaces operated.	Fuel used.	Location.
Algoma Steel Corporation, Limited	4	Coke	Sault Ste. Marie.
Canadian Furnace Company, Limited	1	Coke	Port Colborne.
Midland Iron and Steel Company, Limited.	1	Coke	Midland.
Standard Iron Company, Limited	1	Coke	Deseronto.
Steel Company of Canada, Limited	2	Coke	Hamilton.

The Standard Iron Company's furnace at Parry Sound was not operated during the year.

In the production of the Algoma Steel Corporation there is included 3,996 tons of spiegeleisen valued at $165,683.46.

Table XI gives particulars of the iron and steel-making industry of the Province for the last five years.

TABLE XI.—PRODUCTION IRON AND STEEL, 1914 TO 1918.

Schedule.	1914	1915	1916	1917	1918
Ontario ore smelted ..... tons	163,779	293,305	215,366	94,318	99,852
Foreign ore smelted ..... "	752,560	623,094	1,056,810	1,221,881	1,400,085
Limestone for flux ..... "	252,258	215,686	296,988	319,535	405,683
Coke ..... "	590,902	486,022	708,273	723,657	869,729
Charcoal ..... bush.	920,045	1,314,957	1,843,209	1,288,390	.....
Pig iron produced ..... tons	556,112	493,400	699,202	691,233	751,650
Value of pig iron produced ..... $	7,041,079	5,910,625	9,739,704	14,201,695	20,522,356
Steel made ..... tons	479,320	471,059	686,959	862,504	881,509
Value of steel made ..... $	7,786,303	7,618,272	12,847,309	22,179,982	28,792,361

As regards steel, it should be noted that the foregoing table includes only steel made by plants in which iron ore is reduced in the blast furnace and converted into steel, whether or not the process is a continuous one. No account is taken of what may be called secondary steel, namely, that made from scrap, turnings, etc. A large quantity of such material is charged into steel furnaces every year, and during the period of the war, the quantity of steel so produced in Canada was little less than that produced from pig iron. Much of this product was for the manufacture of shells, and a considerable proportion of it was made in the electric furnace. Nor does the production of pig iron include that made from scrap, on which process several plants were operated during the year.

It will be observed that no charcoal iron was made in 1918. Of the coke consumed 408,033 tons, or nearly that company's entire consumption, was made by the Algoma Steel Corporation at its own ovens at Sault Ste. Marie. The coking plant consists of 110 Koppers retort ovens and 25 Wilputte retorts; 25 additional ovens of the latter type are in course of construction. The Steel Company of Canada has also installed a coke-making battery of ovens which is being operated in 1919.

Lead

The Estate of James Robertson continued to operate the lead mine and smelter at Galetta. The quantity of pig lead produced at these works, together with a small quantity recovered from Cobalt silver ores treated at Denver, Colorado, was 1,670,251 pounds, valued at $149,841.

The average number of men employed in the mine and works at Galetta was 37, and the wages paid for labour amounted to $41,238.

Molybdenite

There was a considerable falling off in the quantity of molybdenite concentrates produced last year as compared with 1917, the output being 47,614 pounds valued at $59,067, as against 77,517 pounds worth $108,501. The market price of this material declined heavily during the year, falling from about $2.25 per pound in January to 87 cents in December. This fact, and the practical cessation of demand even before the close of the war, had a discouraging effect upon production.

The concentrating plants in operation were as shown in the following list:—

MOLYBDENITE CONCENTRATING PLANTS, 1918.

Name.	Location.	Lbs. Concentrates produced.
Mines Branch, Department of Mines	Ottawa	8,533
Renfrew Molybdenum Mines, Ltd.	Brougham tp.	35,561
Steel Alloys Corporation	Dacre	1,090
Spain, W. J.	Dacre	2,430
Total		47,614

The largest producer of concentrates, the Renfrew Molybdenum Mines, Limited, whose deposit is situated on lots 8 and 9 in the eleventh concession of the township of Brougham, shipped its output to France.

Molybdenum Products Company, Limited, have erected a Callow flotation plant for the concentration of molybdenite on their property, lots 32 in the fifteenth and sixteenth concession, of Monmouth township, near Wilberforce station on the Irondale, Bancroft and Ottawa railway. The mill was completed about the end of the year, and no ore was mined or treated in 1918.

Steel Alloys Corporation have acquired the Spain mine, lots 30 to 33 in the fourth concession and 30 to 32 in the fifth concession of the township of Griffith, also the Sunset mine on lots 35 and 36 in the fourteenth concession of the township of Brougham, near Dacre. There is a mill and concentration plant on the former

property with a treatment capacity of 50 tons of ore per day. The mill was overhauled during the latter part of the year and equipped with Callow flotation cells. The two properties are connected by a road about one mile long.

At the Chisholm mine, near Enterprise, in the township of East Camden, the Sheffield Molybdenite Mining Company was engaged from June to December in installing a flotation process for obtaining molybdenite concentrates, together with a Wilfley table apparatus for separating the associated pyrite as a by-product.

Following is a list of molybdenite producers in 1918:—

PRODUCERS OF MOLYBDENITE, 1918.

Name.	Location of Deposit.	P.O. Address.
Barton, Jas. W.	Near Timagami Stn.	318 Palmerston Blvd., Toronto
Bancroft Mining Company	Bancroft	304 University St., Montreal.
Cole, J. E.	Dacre	Dacre.
Day, James F.	Renfrew county	Box 540, Sudbury.
International Molybdenum Company.	Renfrew county	Orillia.
Ontario Molybdenum Company	Tory Hill	305 Mail Bldg., Toronto.
Renfrew Molybdenum Mines, Ltd.	Brougham tp.	128 Bleury St., Montreal.
Spain, W. J.	Dacre	Dacre.
Steel Alloys Corporation	Dacre	Wheeling, West Virginia, U.S.A.
Schreiner, J. C.	Dacre	May Bldg., Pittsburgh, Pa.
Taylor, A. W.	Ashdod	123 Bay St., Toronto.

There were several other operators engaged in development work, whose properties had not reached the stage of production, either of ore or concentrates. Reference to these will be found under the heading Mines of Ontario.

A full statement regarding the Molybdenite Deposits of Ontario is given by A. L. Parsons in Vol. XXVI of the Bureau's Reports, 1917, pp. 275-313.

Materials of Construction

Clay Products

Statistics of production show a marked decrease in the output of building materials, including bricks and other articles manufactured from clay in whole or in part. This was an inevitable result of the terrible contest in which Canada as well as practically the whole of the civilized world was engaged. The energies of the people were devoted for the time being solely to the prosecution of the war, and until the liberties of the nations were placed beyond the challenge of Germany, the construction of buildings or public improvements was a matter to be left for a happier time.

Pressed and Fancy Brick.—The number of pressed and fancy brick manufactured last year was 25,377 M, worth at the factory $396,698, as compared with 36,233 M, worth $474,614 in 1917. As in the latter year, more than one-half the production was made by Milton Pressed Brick Company, Limited, which utilizes as raw material the banks of Medina shale which occur near the town of Milton in Halton county. Overlying the Medina shale is five or eight feet of a limy grayish red clay which is mixed with ground shale to ensure a good colour and is used in

the manufacture of wire-cut brick. The shale itself is ground and made into red pressed brick of good quality; there is also a band of bluish gray shale about two feet thick which is used for the manufacture of buff-coloured brick.

Common Brick, Drain and Building Tile.—There is abundance of clay suitable for brick and tile-making in most parts of older Ontario, where the great bulk of the Province's population resides. The consequent accessibility of good material for permanent and safe construction of dwelling houses and buildings generally is not one of the least advantages of life in Ontario. The cities and towns of this Province will compare favourably with those of many parts of the United States, for example, where buildings made of wood and consequently more subject to damage or destruction by fire, are more common than they are here.

The steadily advancing cost of labour, fuel and machinery has had the same effect upon the selling price of bricks and other building material as upon other commodities. In fact, it may be said that these are the only factors in the price of bricks, since the value of the raw material in the clay bank is practically negligible.

Extensive brickyards exist in the neighbourhood of most of our cities and large towns, since bricks being both bulky and heavy for transportation purposes, it is essential to keep freight charges down to the lowest possible point. In the outskirts of Toronto are many large brickyards equipped to meet the demand which it is hoped will follow the return of peace and the renewal of building operations. The scarcity of houses has become pressing. Rents, already high, have advanced, and it is evident the housing accommodation is insufficient. Some house construction is in progress, but builders anticipate a recession from the present cost of materials and labour, and meantime refrain from large scale operations.

The following table gives the figures of output, value, fuel consumption and price for common brick, drain tile and hollow building tile. As will be seen, common brick which in 1915 sold at $7.96 per M have risen to $13.44.

TABLE XII.—OUTPUT AND VALUE OF BRICK AND TILE, 1918.

Product	M.	Value $	Value per M.
Common Brick	49,498	665,454	$13 44
Drain Tile	13,087	309,899	.....
Hollow Building Tile	.....	195,588	.....

In the matter of fuel used in firing the brick kilns, the figures indicate a decided decrease in the use of wood, and a corresponding increase in the use of coal. The quantity of natural gas also shows a considerable decline, but a marked advance in the price per thousand feet.

FUEL CONSUMPTION.

Wood			Coal or Coke			Natural Gas		
Cords	Value $		Tons	Value $		M. cu. ft.	Value $	
	Total	per cord		Total	per ton		Total	per M.
13,378	70,845	5 29	27,791	195,322	7 03	112,678	28,917	0 25

The average period of operation for the brick and tile plants was 132 days in the year 1918. Many of the smaller plants operate in the summer months only. Employees numbered 1,021, and $667,715 was paid in wages.

Following is a list of the brick and tile operators who reported an output in 1918:—

BRICK AND TILE PLANTS, 1918.

Name.	Address.	Product.
Alvinston Brick & Tile Co., Ltd.	Alvinston	Brick, Tile and Hollow Blocks.
Armstrong Bros.	Fletcher	Tile.
Baird & Son, H. C.	Parkhill	Brick and Tile.
Bond & Bird	Woodstock, R.R. No. 5	Brick.
Broadwell & Son, B.	Kingsville	Tile.
Brown, J. W.	Vienna	Tile.
Brownscombe Bros.	Paisley, R.R. No. 2	Brick and Tile.
Brownscombe & Sons, H.	Cargill	Brick and Tile.
Buck, J. L.	Port Rowan	Brick and Tile.
Butwell, Richard	Humber Bay	Brick.
Cabana, Jr., Oliver	Zurich	Brick and Tile.
Cairo Brick and Tile Works	Cairo	Brick and Tile.
Cawrse, J. W.	London	Brick and Tile.
Canadian Pressed Brick Co., Ltd.	Hamilton	Pressed Brick.
Clark, Walter	Corunna	Brick and Tile.
Cooper, W. C.		Brick.
Curtin, Frank	Lindsay	Brick.
Curtis Bros.	Peterboro', R.R. No. 9	Brick and Tile.
Deller & Sons, Geo.	Norwich	Brick, Tile and Hollow Blocks.
Deller, Wm. H.	Thorndale, R.R. No. 4	Tile.
Dochart Brick & Tile Works	Arnprior	Brick, Tile and Blocks.
Dolan, John	Watford, R.R. No. 2	Tile.
Dominion Sewer Pipe Co., Ltd.	Aldershot	Brick and Tile.
Don Valley Brick Works	Todmorden	Common, Pressed and Fancy Brick.
Elliott & Sons, Jas.	Steelton	Brick.
Frank, E. D.	Strathroy, R.R. No. 6	Brick and Tile.
Frid Bros.	Hamilton	Brick.
Gardiner, William	Blenheim	Brick and Tile.
Hallatt, H.	Comber	Brick and Tile.
Halton Brick Co., Ltd.	Terra Cotta	Pressed Brick.
Hamilton Pressed Brick Co., Limited	Hamilton	Pressed Brick.
Hill, A. W.	Coatsworth, R.R. No. 1	Brick and Tile.
Hill, W. J. and J. S.	Madoc	Brick.
Hiscock & Sons	Cobourg	Brick.

BRICK AND TILE PLANTS, 1918.—*Continued.*

Name.	Address.	Products.
Hitch, Mrs. Susan	Ridgetown	Brick, Tile and Hollow Blocks.
Hitch, Thos.	St. Thomas	Brick and Tile.
Hohl, John	Wellesley, R. R. No. 1	Brick and Tile.
Holland & Son, William	Ruscomb	Tile.
Howlett, Fred	Petrolia	Tile.
Interprovincial Pressed Brick Co. of Canada, Ltd., The	Cheltenham	Pressed Brick.
Jackson Bros.	Brantford	Brick.
Janes, D. A.	Delaware	Brick and Tile.
Jasperson, B.	Kingsville	Brick, Tile and Hollow Blocks.
Jervis & Son, John	Dorchester Station	Brick and Tile.
Jordan, D.	Chatham	Brick and Tile.
Koebel, Joseph Z.	St. Clements	Brick and Tile.
Kruse Bros.	Egmondville	Brick and Tile.
Kuhn, Henry J.	Crediton	Tile.
Labey & Son, Geo. A.	Foxboro'	Tile.
Lindsay, Stephen	Wallaceburg, R.R. No. 2	Tile.
Lowe, Jos.	Meaford, R. R. No. 1	Tile.
Lowes, Gordon	Kent Centre	Brick and Tile.
MacKay Bros.	Dutton	Brick and Tile.
McCredie & Reid	Belmont, R.R. No. 3	Brick and Tile.
Marshall, W. W.	Woodstock	Brick and Tile.
Martin, David	Thamesville	Brick and Tile.
Middleton, Chas.	Wyoming	Tile.
Milton Pressed Brick Co., Ltd.	Milton	Pressed and Fancy Brick.
Miner, J. T.	Kingsville, R.R. No. 2	Brick and Tile.
National Fire Proofing Co. of Canada, Ltd.	Aldershot	Hollow Blocks.
New, Edward	Hamilton	Brick.
Odell & Sons, Wm.	Ingersoll	Brick, Tile and Blocks.
Ollman Bros.	Hamilton	Brick.
Ontario Paving Brick Co., Limited	West Toronto	Brick.
Ott Brick & Tile Mfg. Co., Limited	Kitchener	Brick.
Ottawa Brick Mfg. Co., Limited, The	Ottawa	Brick.
Owen Sound Brick Co., Limited	Owen Sound	Brick.
Parks, H. W.	Dresden	Tile and Hollow Blocks.
Paxton & Bray	St. Catharines	Brick.
Pears & Son, James	Toronto	Brick.
Pembroke Brick Co., The	Pembroke	Brick.
Petty, Chas.	Cherrywood	Tile.
Phillips & Son, Thos.	Lucknow, R.R. No. 1	Tile.
Phinn, Geo. E.	Lucan	Brick, Tile and Hollow Blocks.
Port Credit Brick Co., Limited, The	Port Credit	Common and Pressed Brick.
Price Estate, John	Toronto	Brick.
Provincial Brick & Tile Plant	Mimico	Brick and Tile.
Richardson & Son, James	Kerwood	Brick and Tile.
Sadler, F. L.	Dublin	Brick and Tile.
Sipprell, J. H.	Wilkesport	Tile.
Smith & Son, Alex.	Dutton, R.R. No. 2	Brick and Tile.
Snelgrove & Teer	Beaverton	Brick and Tile.
Standard Brick Co., Ltd.	Toronto	Brick.
Sudbury Brick Co., Limited	Sudbury	Brick.
Sun Brick Co., Limited	Toronto	Fancy Brick and Hollow Blocks.

BRICK AND TILE PLANTS, 1918.—*Continued.*

Name.	Address.	Products.
Thompson Bros.	Essex	Brick and Tile.
Thornton, John	Perth	Brick.
Wagstaff, Chas.	Lindsay	Brick and Tile.
Waite, J. E.	Forrester's Falls	Brick and Tile.
Wallace & Son, R.	North Bay	Brick.
Warwick Brick Works	London	Brick.
Woodslee Brick & Tile Co.	Woodslee	Brick and Tile.
Wright, J. C.	Proton	Brick and Tile.

Pottery.—The manufacture of pottery is not increasing in Ontario, our native clays so far employed not being suitable for the manufacture of fine goods. Particulars were given in the Bureau's last Report[1] of the discovery of what appears to be a deposit of good refractory clay adapted to the making of chinaware and porcelain, at the foot of Long Portage, on the banks of the Mattagami river. Similar clays have been found on the Missanaibi and Abitibi rivers. Exploration has not yet shown whether these are separate and isolated deposits, or whether they are in any way connected. In any event, when transportation facilities have been provided, these clay deposits, which seem to be of large size, may play an important part in the industrial development of that part of Ontario.

Pottery to the value of $88,275 was made last year. The business employed 22 workmen, who were paid wages amounting to $22,061.

Following is a list of the operators:—

POTTERY MANUFACTURERS, 1918.

Name.	Address.
R. Campbell's Sons	Lock St. South, Hamilton.
J. Cranston Estate	216 Dundurn St. South, Hamilton.
Davis & Son, John	601 Merton St., Toronto.
Foster Pottery Company	Main St. West, Hamilton.

Sewer Pipe.—Three sewer pipe manufacturing companies sold last year sewer pipe having a value at the works of $362,536. The actual production was a little less, stocks having been carried over from 1917. The number of employees was 171, and the wages paid them $139,775.

The raw material for sewer pipe manufacture is the red-burning Medina shale, which is quarried at Waterdown and brought to the several works by rail. A typical analysis[2] of this shale is silica 65.04, alumina 16.14, ferric oxide 6.37, lime .80, magnesia 2.17, soda .64, potash 3.21, sulphur .12, loss by heat 5.98.

The list of manufacturers follows:—

SEWER PIPE WORKS, 1918.

Name of Company.	Location of Plant.	P.O. Address of Manager, etc.
Dominion Sewer Pipe Co., Ltd.	Swansea	Swansea.
Hamilton & Toronto Sewer Pipe Co., Ltd.	Hamilton	Hamilton.
Ontario Sewer Pipe Co., Ltd.	Mimico	Mimico.

[1]Vol. XXVII, 1918, pp. 36, 37.
[2]Rep. Bur. Min., Vol. XV, 1906, pp. 116, 14.

Brick, Tile, Sewer Pipe and Pottery

The following table shows the comparative value of the output of clay products since the outbreak of the war. As will be observed, the production for 1918 was worth a little less than half that of 1914.

TABLE XIII.—VALUE OF CLAY PRODUCTS, 1914-1918.

Year.	Brick.		Pottery.	Drain Tile.	Sewer Pipe.	Total.
	Common.	Pressed, Fancy, Hollow Tile, etc.				
	$	$	$	$	$	$
1914	2,336,207	894,384	25,720	277,530	571,756	4,105,597
1915	763,591	375,865	49,387	321,253	361,283	1,871,379
1916	509,559	495,895	87,025	275,471	216,749	1,584,699
1917	713,824	776,302	94,501	546,040	379,923	2,509,590
1918	665,454	592,286	88,275	309,899	362,536	2,018,450

Sand-Lime Brick.—The manufacture of this variety of brick, made by compressing sand and lime, sprang up a few years ago, growing out of the effort to procure a building material which could be produced and sold more cheaply than brick made from clay or shale. The quantity manufactured last year was less than in 1917, being 7,941 M as compared with 9,079 M. In value there was an increase of $4,349, the selling price of the bricks having risen from $9.60 per M to $11.52. In 1918 the average price in the United States for "common" sand-lime brick was $8.94 per M, and for "front" brick $11.35 per M; corresponding prices in 1917 were $7.54 and $9.36 per M. These figures, it will be seen, are slightly lower than those for Ontario.

The list of operating plants is as follows, several works being idle, owing mainly to the difficulty in procuring labour:—

SAND-LIME BRICK PRODUCERS, 1918.

Name.	Location of Plant.	Address.
Hepworth Silica Pressed Brick Co.....	Hepworth	Hepworth.
Silicate Brick Co. of Ottawa, Ltd.....	278 Echo Drive, Ottawa..	Ottawa.
The Canada Sand Lime Pressed Brick Co..	Symes Rd., West Toronto	Toronto, 915 Keele St.
Willcox Lake Brick Co., Ltd.	Whitchurch tp.	Richmond Hill.
York Sandstone Brick Co., Ltd.	Gerrard St. and Victoria Ave., Toronto.	Toronto, 431 St. Clarens Ave.

Lime.—The number of lime-producing establishments is steadily decreasing, but the quantity of lime produced is not greatly reduced. This means that the small kilns which formerly figured largely in the production of lime are giving place to plants of greater capacity, and that considerable lime is being used for other than building purposes. One of these is in the manufacture of compounds such as "cyanamide," a nitrogenous fertilizer made by the American Cyanamid Company

at Niagara Falls. Another use for lime is in the refining of sugar, but in cases where the limestone is bought from an outside quarry, the lime is not included in the figures of production, since the stone has already been taken to account under its own proper heading.

Lime was made in 1918 to the extent of 2,650,285 bushels, valued at $872,177. The corresponding figures for 1917 were 2,820,507 bushels, worth $657,364, so that the average price of lime has risen from 23.3 cents per bushel in 1917 to 32.9 cents per bushel in 1918. Prices varied, but those plants conveniently situated for marketing their product were able to sell to the best advantage.

The number of employees was 287, who received in wages $300,746, or at the rate of $1,047.89 each. Fuel was used in burning the lime of a total value of $237,427. Of this $3,704 was for natural gas, $21,794 was for wood, $79,643 for coal, and $132,286 for wood and coal. The smaller plants used wood almost exclusively. About 212,000 bushels of lime were converted into the hydrated form. This is done by the addition of sufficient water to satisfy the chemical affinity of quick lime for water. Hydrated lime is used in the same way as quick lime for all the purposes to which the latter is applied. Being in the form of powder, it can be mixed dry with other materials and thus has some advantage over quick lime. It is easier to handle than the latter, as it can be shipped in bags like cement. The price for hydrated lime is about the same as for quick lime, the water taken up by the former during conversion about counter-balancing the greater cost of manufacture.

Below are given the names of producers and the location of plants in Ontario which operated in 1918:—

LIME PRODUCERS, 1918.

Name of Owner or Company.	Location.
American Cyanamid Co.	Niagara Falls.
Annis, George	Orillia.
Beachville White Lime Co., Limited	Beachville.
Bergin, Patrick	Napanee.
Cameron, W. M.	Carleton Place.
Chalmers & Campbell	Owen Sound.
Chestnut, W. D.	Duntroon.
Christie, Henderson & Co., Limited	Puslinch, Kelso and Hespeler.
Contractors' Supply Co., Limited	Melville Junction and Teeswater.
Delta Lime Co., Limited	Delta.
Elora White Lime Co., Limited	Elora.
Flielers, Edward	Clarendon tp.
Gallagher Lime & Stone Co., Limited	Hamilton.
Harvey, E., Limited	Rockwood.
Higginson & Stevens	Hawkesbury.
Jamieson, J. M.	Forrester's Falls.
McTernan, John	Torbolton.
Marshall Lime & Cement Works, Jas.	Hamilton.
Parks Bros.	Troy.
Robertson Co., D., Limited	Milton.
Smith, John S.	Inverhuron.
Standard Chemical Iron & Lumber Co., Limited	Eganville.
Standard White Lime Co., Limited	Beachville, Guelph and St. Mary's.
Toronto Brick Co., Limited	Coboconk.
Toronto Lime Co., Limited	Limehouse and Dolly Varden.
Toronto Plaster Co.	Teeswater.
Weppler, Henry	Priceville, R.R. No. 1.

Portland Cement.—The cement industry shared in the general depression under which the manufacture of building materials laboured last year, and in consequence production was on a considerably lower scale. The number of barrels of cement marketed was 1,226,244, as compared with 2,063,231 barrels in 1917. Actual production of cement was somewhat less, namely, 1,138,980 barrels. In value, cement sales represented $1,910,839, there being a rise in price at the works from $1.42 to $1.56, or 14 cents per barrel.

Of the six Ontario plants owned by the Canada Cement Company, Limited, only one, namely, plant No. 5, near Belleville, was operated during the year in the manufacture of cement. The company was largtly engaged in the making of war munitions.

The number of employees last year was 425, as compared with 589 in 1917, and the wages paid were $423,580.

PORTLAND CEMENT PLANTS, 1918.

Name of Company.	Location of Plant.	P.O. Address of Manager, etc.
Canada Cement Company, Limited, Plant No. 5.	Thurlow tp., near Belleville.	Herald Bldg., Montreal.
The Hanover Portland Cement Co., Ltd.	Hanover	Hanover.
National Portland Cement Co., Ltd.	Durham	Durham.
St. Mary's Portland Cement Co., Ltd.	St. Mary's	St. Mary's.

At the following works no cement was made during the year: Canada Cement Company, Limited, Plant No. 4, Point Anne, No. 6, Marlbank, No. 7, Lakefield, No. 8, Port Colborne, No. 9, Shallow Lake; Union Cement Company, Limited, Owen Sound; Ontario Portland Cement Company, Limited, Brantford; The Maple Leaf Cement Company, Limited, Atwood, and the Kirkfield Portland Cement Company, Limited. The last-named company went into voluntary liquidation 15th August, 1918.

Cement Products.—Portland cement has come to be largely used for the manufacture of field and culvert tile, building blocks, heads and sills, etc., thus displacing clay and stone. Its adaptability for other uses was shown during the war period by the construction of cement ships. The manufacture of cement products was not active in 1918, the building trade being depressed and labour scarce. In the natural gas districts, makers were deprived of the use of gas for fuel. For these reasons many plants were idle or did very little. Nevertheless, the output was greater in value than in 1917, being $124,093, as compared with $100,318. The number of employees was 72, and the amount paid in wages was $25,901. On an average the plants operated 122 days in the year, being mostly closed in winter.

A feature of the business is the use of portable plants which are taken to the site of the construction work, thus saving transportation charges on the finished product.

Returns received show the following output for 1918:—

MANUFACTURE OF CEMENT PRODUCTS, 1918.

Product.	Number	Value.
		$
Cement Brick	92,124	1,290
Cement Blocks	211,354	41,362
Cement Tile and Sewer Pipe	1,423,652	81,351
Total Value		124,003

The following list gives the names and addresses of manufacturers of cement products reporting to the Bureau of Mines:—

MANUFACTURERS OF CEMENT PRODUCTS, 1918.

Name.	Address.	Products.
Andrews, S. J.	Clinton	Blocks and Tile.
Begg, J. B.	Lindsay	Blocks and Tile.
Campbell, Neil F.	West Lorne	Tile.
Corlett, A. S.	Leamington	Brick.
de Jersey, O. W.	Forest	Blocks.
Deveney & Campbell	St. Mary's	Blocks and Tile.
Dillon, John	Seeley's Bay	Tile.
Fletcher & Sons, J. H.	Fonthill	Blocks.
Gillies, A.	Galt	Brick and Blocks.
Granite Concrete Block Co., Ltd.	Mt. Dennis	Blocks.
Grece, G. C.	Wallaceburg	Blocks and Tile.
Hewitt & Son, A. B.	Princeton	Tile.
Hyndman, Jno.	Gorrie	Tile.
Iler Concrete Tile Co.	Arner	Tile.
Karr & Rose	Petrolia	Tile.
Kilgour, D. G.	Eganville	Tile.
McLenaghan, W. A.	Essex	Blocks and Tile.
McQueen, Alex.	Arthur	Tile.
Malcolm, Jno.	Fergus	Tile.
Moore, D. G.	Ailsa Craig	Blocks and Tile.
Oil Springs Tile & Cement Co.	Oil Springs	Tile.
Ord, John A.	Guelph, R.R. No. 3	Tile.
Pfaff, W. E.	Hensall	Blocks and Tile.
Schram, A. J.	Camlachie	Tile.
Smith, A. G. C.	Acton	Blocks and Tile.
Taylor & Hall	Peterboro	Blocks and Tile.
Watts, Alfred	Tillsonburg	Brick, Blocks and Tile.
Williams, E. J.	Wheatley	Blocks and Tile.
Wyatt, W. J.	Cottam	Blocks and Tile.

Sand and Gravel.—These useful construction materials are found in abundance in most parts of Ontario, being in large part the result of the glacial activity which is so marked a feature of the geological history of the Province. Both igneous and sedimentary rocks have contributed to the sands and gravels. In consequence there is a wide range of products, both in composition, size of particles and the uses for which they are suited. In the beds of the great lakes and connecting rivers

are found many deposits of sand and gravel, and large quantities of both have been recovered by dredging or sand-sucking vessels, principally in the neighbourhood of the larger towns and cities along the border. The building trade of Detroit and Cleveland especially has drawn heavily on the gravels from the St. Clair river and the sand bars of Pelee Island and Point Pelee, and much material for construction works on the Welland canal has come from the north shore of lake Erie and also the mouth of the Niagara river in lake Ontario.

Volume XXVII of the Bureau's Reports, Part II, contains an account of the Sand and Gravel Deposits of the Province, arranged by counties. The author, Prof. Auguste Ledoux, a gallant soldier in the Belgian army which so heroically withstood the onrush of the German hosts in 1914, had covered the older part of the Province, and was investigating the newer portions when his sudden death on 7th August, 1918, put an end to the work.

From the returns sent in by 107 operators in sand and gravel it appears that the total quantity raised and marketed was somewhat under that of 1917, being 1,023,497 cubic yards in all, valued at $553,638, an average of $0.54 per cubic yard. In 1917 the quantity was 1,187,973 cubic yards, valued at $431,597. The average price per cubic yard in 1917 was $0.363 and in 1916 $0.372.

Following is a list of sand and gravel operators who removed 1,000 cubic yards or more during the year:—

SAND AND GRAVEL OPERATORS, 1918.

Name of Owner or Company.	Material.	Address.
Armstrong Supply Co., Ltd., The	Gravel	Hamilton, 106 Dunsmere Ave.
Ashton, Thos.	Sand	Toronto, 1354 Queen St. E.
Barton Sand & Gravel Co., The	Sand and gravel	Bartonville.
Baxter, Jas.	Gravel	Brownsville, R.R. No. 1.
Bellyou, Norman E.	Sand and gravel	Trenton, R.R. No. 4.
Brantford Lands, Ltd.	Gravel	Brantford, 45 Market St.
Campbell, A.	Gravel	Strathroy.
Chapman, Walter	Gravel	Uxbridge.
Chatham Sand & Gravel Co.	Sand and gravel	Chatham.
City of Brantford	Gravel	Brantford.
City of Peterboro	Gravel	Peterborough.
Creeper, John	Sand and gravel	Belleville, R.R. No. 5.
Dean, Harry F.	Gravel	Tillsonburg, R.R. No. 4.
Department of Public Highways, Ont.	Gravel	Toronto, Parliament Bldgs.
Downey & Sons, I. J.	Gravel	Sault Ste. Marie, Ont.
Empire Limestone Co.	Sand	Buffalo, N.Y., 19 Hudson St.
Fonthill Gravel Co., Ltd.	Sand	Fonthill.
Gillespie Est., J. M.	Sand	Perth.
Hale, J. M.	Gravel	Aylmer, Box 6.
Hamilton Sand & Gravel, Ltd.	Sand and gravel	Hamilton, 508 Spectator Bldg.
Hansen, H. C.	Sand and gravel	Cleveland, Ohio, 7325 Clinton Ave.
Kerr, Estate Jno.	Sand and gravel	Petrolia.
Kilbourne & Son, Harvey	Sand	London, 5 Cove Road.

SAND AND GRAVEL OPERATORS, 1918.—*Continued.*

Name of Owner or Company.	Material.	Address.
Larter, Chas.	Sand	Galt, 76 Chalmers St.
Lyons Fuel & Supply Co.	Gravel	Sault Ste. Marie, Ont.
Maple Sand, Gravel & Brick Co.	Sand and gravel	Toronto, 79 Spadina Ave.
Marine Contracting Co.	Gravel	Port Huron, Mich.
Markus, Wm., Ltd.	Gravel	Pembroke.
McAuley, P. L.	Gravel	Trenton, R.R. No. 4.
McLean & Sons, A. B.	Gravel	Sault Ste. Marie.
McMurray, Geo.	Sand and gravel	Tamblings Corners.
McPhail & Wright Construction Co.	Sand	Sault Ste. Marie.
Ollman Bros.	Sand	Hamilton, Macklin St.
Oneida Lime Co., Ltd.	Sand	Buffalo, N.Y., 406 Erie Co. Bank Bldg.
Ontario Gravel Freighting Co., Ltd.	Gravel	Windsor.
Ontario Malleable Iron Co., Ltd.	Sand	Oshawa.
Pelee Island Sand & Gravel Co.	Gravel	Cleveland, Ohio.
Ponsford, A. E.	Sand and gravel	St. Thomas, 605 Talbot St.
Reid, C. F.	Sand and gravel	Odessa, R.R. No. 1.
Rideau Canal Supply Co.	Sand and gravel	Ottawa.
Roesand Company, Ltd.	Sand and gravel	Toronto, 407 Lumsden Bldg.
Sand & Supplies, Ltd.	Sand and gravel	Toronto, 19 Melinda St.
Sarjeant Co., Ltd., The	Sand and gravel	Barrie.
Standard Gravel Co., Ltd.	Gravel	Niagara Falls, Ont.
Sleemon, Philip	Gravel	Port Hope.
Smith, J. W.	Sand and gravel	Leamington.
Taylor Gravel Pit	Gravel	Rodney.
Twin City Tug Line	Sand	Port Arthur, Box 42.
United Fuel & Supply Co.	Sand and gravel	Detroit, Mich., Free Press Bldg.
Whiting & Son, R.	Sand and gravel	Copleston.
Windsor, Essex & Lake Shore Ry. Co.	Gravel	Kingsville.
Windsor Sand & Gravel Co., Ltd., The	Sand and gravel	Walkerville.
Wood, John T.	Sand and gravel	Exeter.
York Sand & Gravel Co., Ltd.	Sand and gravel	Toronto, 1327 Bloor St. W.

Stone.—Quarry operations last year were principally in limestone and quartz, the latter of which is dealt with separately. Trap and granite were also produced on a smaller scale, but sandstone was almost entirely neglected. The closing of the quarries at Credit Forks had no doubt much to do with the latter feature.

The limestone was for building purposes, either as dressed stone or crushed for use in concrete, or for flux, lime-burning, chemical manufacture, etc., while the trap and granite were mainly utilized in making roads.

The value of the stone raised last year was $869,239, which is $69,813 less than in 1917. Employees numbered 631 and $478,070 was paid out in wages.

Classified according to variety, the quarry products of the Province for 1918, together with comparative values from 1915 to 1918 inclusive, were worth as follows:—

TABLE XIV.—STONE PRODUCTION, 1915-1918.

Year.	Limestone.	Sandstone.	Trap.	Granite.	Marble.	Quartz.
	$	$	$	$	$	$
1915.....	587,000	5,500	32,100	15,500	10,600	142,354
1916.....	625,628	14,268	91,762	23,655	.....	223,514
1917.....	728,975	115,932	70,570	25,575	.....	358,674
1918.....	820,985	145	24,774	23,334	.....	452,711

Below are given the names of quarry operators reporting a production for 1918, classified according to product:—

LIMESTONE AND SANDSTONE QUARRIES, 1918.

Name of Owner, Firm or Company.	Location.	Kind of Stone.
Beachville White Lime Co., Limited.....	Beachville	Limestone.
Bergin, Patrick	Napanee	do
Bolender Bros.	Haliburton	Ground Limestone, Poultry grit.
Brunner, Mond Canada, Ltd.	Amherstburg	Limestone.
Canada Cement Co., Ltd.	Thurlow tp.	Limestone.
Canada Crushed Stone Corporation, Limited.	Dundas	Limestone and Sandstone.
Contractors' Supply Co., Limited.....	Orangeville	Crushed Limestone.
Cook, J. S.	Wiarton	Limestone.
Crushed Stone, Limited	Kirkfield	Crushed Limestone.
Dept. of Public Highways	Toronto	Limestone.
Elmsley S. Twp.	Elmsley S. tp.	do
Farr, Mrs. C. C.	Haileybury	do
Hagersville Crushed Stone Co., Limited...	Hagersville	do
Hamilton, Corporation of	Hamilton	do, crushed.
Hildreth, Chas.	Barton tp.	do
Kingston, Corporation of	Kingston	do, crushed.
Longford Quarry Co., Limited	Longford Mills	do
Markus, Wm., Ltd.	Pembroke	do
Michigan Central Railway	Hagersville	do
Oliver-Rogers Stone Co., Limited, The.....	Owen Sound	do
Ontario Stone Corporation, Limited	Uhthoff	do
Peters Coal Co.	Coldwater	do
Point Anne Quarries, Limited	Point Anne	do
Queenston Quarry Co., Limited	St. Davids	do
Quinlan & Robertson, Ltd.	Crookston	do
Reid, C. F.	Odessa	do
Renfrew, Town of	Renfrew	do
Robertson, D., & Company, Limited	Milton	Sandstone.
Robillard, H., & Son	Ottawa	Limestone.
Roddy & Monk	Kingston	do
St. Marys Horse Shoe Quarry, Limited....	St. Marys	do
Standard White Lime Co., Limited	Beachville, Guelph and St. Marys	do
Walker Bros.	Thorold	do
Welland County Lime Works Co., Limited..	Port Colborne	do
Wentworth Quarry Co., Limited	Vinemount	do

GRANITE AND TRAP QUARRIES, 1918.

Name of Owner, Firm or Company.	Location.	Kind of Stone.
Brown, Robert	Lyndhurst	Granite.
Bruce Mines Trap Rock Co., Limited	Bruce Mines	Trap.
Horne, Wm.	Ignace and Butler	Granite Blocks and Monuments.
National Potash Corporation, Limited	Gravenhurst	Crushed Granite.
Ontario Rock Co., Limited	Preneveau	Trap.
Tillson Quarries	Nepean tp., Carleton co.	Granite.

Quartz

A very considerable quantity of silica or quartz was quarried in 1918, practically all of it for metallurgical use.

The Dominion Mines and Quarries, Limited, operated a deposit on East Neebish island near Sault Ste. Marie and shipped by boat during the season of navigation. The product of this quarry contains about 98 per cent. silica, and is used in the manufacture of ferro-silicon at Buffalo, N.Y.

Electro-Metals, Limited, Welland, also manufacture ferro-silicon, and got a like quality of quartz from their quarry near Killarney on the north shore of Georgian bay. This property was formery owned and worked by Willmott and Company of Toronto.

The International Nickel Company of Canada require a large quantity of silica in their smelting plant at Copper Cliff, where the nickel-copper ores of Sudbury are reduced to the form of matte. Their supply is obtained from a quarry in the township of Dill owned and operated by the Company itself.

McPhail and Wright Construction Company, Limited, of Sault Ste. Marie, worked a silica deposit at Mile 21 on the Algoma Central railway, and shipped the product to the furnaces of the Algoma Steel Corporation at Sault Ste. Marie.

In the feldspar quarries near Verona on the Kingston and Pembroke railway dikes of nearly pure quartz are occasionally encountered. This quartz is extracted separately. A small quantity of the material was shipped last year from the stock piles of the Kingston Feldspar and Mining Company, Limited.

The Mond Nickel Company, Limited, obtain the necessary silica for their smelting operations at Coniston from the old Bruce mines, which is now owned by the company. The ore is exceedingly silicious, and has the advantage of carrying a small percentage of copper. Great piles of tailings, or "skimpings," as they were locally termed, formerly existed at these mines, the remains of by-gone mining and ore-dressing operations. These were used as a source of silica by the Mond company until they were exhausted. Parts of these "skimpings" heaps carried as much as two per cent. of copper.

The quantity of quartz raised and shipped to market in 1918 was 213,420 tons, valued at $452,711. The number of men employed in the industry was 207, and the wages paid them $187,635. In 1917 the quartz production amounted to 176,993 tons and the value was $358,674. The average price at which the output of 1917 was appraised was $2.02 per ton, and of 1918, $2.12 per ton.

Appended is a list of the companies operating quartz quarries during 1918:—

QUARTZ QUARRIES, 1918.

Name of Owner, Firm or Company.	Location.	P.O. Address of Manager, etc.
Canadian Copper Company[1]	Dill tp.	Copper Cliff.
Dominion Mines and Quarries, Limited	Port Neebish	Sault Ste. Marie, Mich.
Electro-Metals, Limited	Killarney	Welland.
International Nickel Company of Canada, Limited	Dill tp.	Copper Cliff.
Kingston Feldspar & Mining Company	Verona	Kingston.
McPhail & Wright Construction Co., Ltd.	Mile 19¾ A. C. Ry.	Sault Ste. Marie.

[1]The Canadian Copper Company operated for the first three months of the year when it was taken over by the International Nickel Company of Canada, Limited.

Actinolite

There was no actual mining of actinolite in 1918, but the plant of the Actinolite Mining Company, Limited, at Actinolite, was operated for about two weeks, and a small quantity of material was ground and shipped to the United States. The product is used largely in making roofs, and also as an ingredient in certain forms of paint. For such purposes its fire-resisting qualities make it useful.

Barite

The only commercial production of barite last year was by Premier Langmuir Mines, Limited, from a deposit in the township of Langmuir, in the Porcupine area. This company has erected a mill for grinding and preparing for market the contents of a large barite vein which traverses the property. The mill was completed and equipped shortly before the close of navigation in 1918, and one shipment of about 60 tons of the product was made. The plant is distant about half a mile from the Night Hawk river, a barge on which conveys the material to the crossing of the river by the branch line of the Timiskaming and Northern Ontario railway at Connaught station.

Other deposits of barite in northern Ontario are in the townships of Yarrow, Cairo and Lawson. A vein of barium sulphate was discovered last year by Russell Cryderman, of Sudbury, in the township of Penhorwood, about 150 miles northwest of Sudbury, and two and one half miles west of Tronnage station on the Canadian Northern railway. It lies close to the railway track.

Some development work was done by T. B. Caldwell on a barite prospect in the township of Levant, in the county of Lanark. In the township of Portland, on lot 5 in concessions eight and nine, during the working of a feldspar deposit, about 200 tons of inferior barite were extracted by Mica Products, Limited, but no shipments were made. Deposits are known to occur elsewhere in eastern Ontario, for instance in the townships of Bathurst (lot 25, concession one), Oso, and North Burgess (lot 20, concession ten). During May and June, 1918, H. C. Bellew, of Montreal, sank a number of pits on the last mentioned property and traced the vein a considerable distance. Analyses showed 98.9 to 99.27 per cent. of barium sulphate.

While not a mineral of first-class importance, barite has a large variety of uses, particularly in the manufacture of paper, paint and rubber goods.

Corundum

The quantity of crude corundum raised during the year was 1,029 tons, and the quantity of refined or grain corundum shipped to market was 137 tons. The only company operating was the Manufacturers Corundum Company, Limited, whose mines and works are situated at Jewelville. Work was discontinued during the year.

Feldspar

There was an increase in the output of feldspar last year over the year before of 1,450 tons and in value of $30,071. The production of 1918 was 19,784 tons, worth at the quarry $111,173, or $5.61, while in 1917 the value was $4.45 per ton, and in 1916, $3.25. The quantity of feldspar raised was 24,691 tons, so that there was a considerable stock on hand at the close of the year.

The bulk of the production was from the quarries along the line of the Kingston and Pembroke railway, in the vicinity of the village of Verona. The product of these quarries is in demand by the large pottery makers of East Liverpool, Ohio, and Newark, New Jersey, and most of the output has been exported to these places. Feldspar is a very common mineral as a rock constituent, but the occurrence of large masses sufficiently large for quarrying operations is less common.

There has been an intermittent production in certain parts of Parry Sound district, and the National Potash Corporation has erected a plant at Muskoka Wharf, near Gravenhurst, for the production of crushed rock and the extraction of potash from a feldspar dike. The plant has not yet got into successful operation for the latter purpose. A little feldspar has also been taken out near Markstay, which is on the main line of the Canadian Pacific railway east of Sudbury.

The workmen engaged in the production of feldspar numbered 138, and their wages amounted to $100,302.

The companies shipping feldspar in 1918 were as follows:—

FELDSPAR PRODUCERS, 1918.

Name.	Location of Deposit.	P.O. Address.
Canada Feldspar Corporation, Ltd.	Verona	Toronto, 168 Madison Ave.
Crystal Products, Ltd.	Godfrey	Toronto, 319 Dominion Bank Bldg.
Dominion Mica Mining Company, Ltd.	McConkey tp.	Detroit, Mich., 1368 Penobscot Bldg.
Donnen Feldspar Company, Limited	Markstay	Ottawa, P.O. Box 2.
Eureka Flint & Spar Co., The	Verona	Trenton, N.J.
Feldspars, Limited	Bedford tp.	Godfrey.
Feldspar Quarries, Limited	Portland tp.	Toronto, 15 Manning Arcade Annex.
Mendels, J. H.	Bathurst tp.	Perth.
National Potash Corporation, Limited	Gravenhurst	Toronto, 178 Spadina Ave.
Richardson, H. W.	Verona	Kingston, 243 King St. East.

Fluorspar

There was a strong demand for fluorspar last year, and prices ruled high. The result was a decided increase in the production in comparison with 1917, the output being 7,286 tons, as against 4,327. There was also an increase in value, the total for 1918 being $153,190, while for 1917 it was $66,474. The average price per ton, which in 1916 was $7.90, increased in 1917 to $15.13 and in 1918 to $21.02.

The main use of fluorspar is as a flux in the making of steel; a minor one is in hydrofluosilicic acid for electrolysis. All the production so far has been from the deposits in the townships of Huntingdon and Madoc in the county of Hastings, where there are numerous occurrences. A map showing the same will be found in Vol. XXVII of the Bureau's Reports, 1918, at page 137, and the several workings are described in this Report under Mines of Ontario. The greater part of the tonnage raised in 1918 was shipped to Hamilton, Welland, Toronto and other points in Ontario, but a portion was exported to the United States.

The number of men employed in the fluorspar mines was 129, and the wages paid them amounted to $85,783.

Following is a list of the operators:—

FLUORSPAR PRODUCERS, 1918.

Name.	Location.	Address.
Canadian Fluorite, Ltd.	Madoc	Madoc.
Canadian Industrial Minerals, Ltd.	Huntingdon and Madoc tps.	Toronto, 1511 Bank of Hamilton Bldg.
Cross & Wellington	Lot 11, Con. XIII, Huntingdon.	Madoc.
Dwyer, P. J.	Wilberforce	Wilberforce.
Gillen & Henderson	Lot 7, Con. XIII, Huntingdon.	Madoc.
Mineral Products, Limited	Lot 2, Con. IV, Madoc	Madoc.
O'Reilly Company	Lot 6, Con. I, Madoc	Madoc.
Usborne, H. L.	Lots 1 and 4, Con. I, Madoc.	Toronto, 30 Sun Life Bldg.
Wallbridge, Mrs. Jane	Lot 4, Con. I, Madoc	Madoc.
Wellington & Munro	Lot 13, Con. XII, Huntingdon.	Madoc.
	Lot 1, Con. I, Madoc	Madoc.

Graphite

The production last year was 2,934 tons, of which 1,040 tons were shipped as crude, and the remainder after refining into flake and foundry grades. The combined value was $208,848. Ontario graphite finds a market mostly in the United States.

Two companies only were mining and milling graphite last year, namely, Black Donald Graphite Company, Limited, whose mine is situated on the shores of Whitefish lake in the township of Brougham, and whose shipping point is Calabogie on the Kingston and Pembroke railway; and the Globe Graphite Mining and Refining Company, Limited, whose mine and refinery are at Port Elmsley, on the Rideau canal, and main office at Syracuse, N.Y.

A third company, the Timmins Graphite Mines, were engaged in developing a new property in the fifth and sixth concessions of the township of North Burgess.

A 200-ton mill was erected and the machinery installed in the early part of 1919. The Spearman process of refining will be adopted.

National Graphite, Limited, put up a mill at Orser siding, near Mumford station, Irondale, Bancroft and Ottawa railway. The Spearman refining process was installed, and the mill began operations in January, 1919. Further particulars will be found in this Report under Mines of Ontario.

The refining of graphite has offered a good many difficulties in the past, and methods adopted have in some cases given unsatisfactory results. The effort is to produce as large a percentage of "flake" as possible, this being the most valuable grade, largely used in the making of crucibles for steel smelting. At the same time, it is necessary to remove the impurities accompanying the ore, such as rock matter, pyrite, mica, etc., flake for crucible-making being required to contain 85 or 90 per cent. of carbon. The buhr stone, pneumatic jig, electrostatic separator, and other appliances have been used with greater or less success, and more recently the flotation process has been introduced. In the selection of a process regard must be had to the physical characteristics of the ore and the nature of the crude flake. It will probably be found that a combination of methods suited to the particular ore will give the best results.

Hitherto a large part of the best flake graphite has been supplied by Ceylon. Difficulties in transportation due to the war have lessened exports from that island, and in the meantime deposits in Madagascar have been developed on a considerable scale, so that the Madagascar product has become a strong competitor with that of Ceylon. The principal market for Ceylon graphite is the United States, but in 1918 the exports to that country were only 8,409 tons, as compared with 21,963 tons in 1917. Great Britain's imports, on the other hand, increased from 4,600 tons in 1917 to 6,386 tons in 1918. In the United States itself numerous deposits of graphite have been found in Alabama, and during the scarcity of foreign supplies, the graphite industry of that State made a rapid development.

The number of workmen employed in graphite mining and milling was 128, and the wages paid them were $102,777.

Following is a list of graphite operators active during the year:—

GRAPHITE OPERATORS, 1918.

Company.	Location of Mine.	P.O. Address.
Black Donald Graphite Co., Limited	Brougham tp.	Calabogie.
National Graphite, Limited[1]	Monteagle tp.	Toronto, 1304 Royal Bank Building.
The Globe Graphite Mining and Refining Co., Limited	Port Elmsley	Syracuse, N.Y., U.S.A., 410 Dillaye Building.
The Timmins Graphite Mines	Stanleyville	Stanleyville.

[1]200-ton refinery under construction.

Gypsum

From the gypsum deposits in the valley of the Grand river there were mined a total of 39,397 tons. Shipments of crushed, ground, calcined and manufactured

gypsum amounted in all to 38,214 tons, valued at $151,564, the output being 10,729 tons less in quantity and $21,426 more in value than in 1917. The market was in Ontario, Quebec and Nova Scotia.

The Ontario Gypsum Company, Limited, of Caledonia, was the only producer in 1918. This company's mines are at Caledonia and its manufactory at Paris. In the latter a large variety of products, such as wall plaster, kalsomine, bug finish, etc., are made.

The mines and works of Grand Gypsum, Limited, situated on lot 45 in the first concession of North Cayuga, were not in operation. The secretary-treasurer of this company is Walter Anderson, 445 King St. East, Hamilton.

Iron Pyrites

Eastern and northwestern Ontario deposits were in operation in 1918, the total shipments being 270,966 tons, valued at $1,144,737. The output in 1917 was greater in quantity by 21,426 tons and less in value by $33,473, the average value per ton being $3.88 in 1917 and $4.22 in 1918. Of the production 240,807 tons were exported to the United States, and 30,159 tons went to acid plants in Ontario. The number of employees was 621, to whom were paid wages amounting to $707,020.

The principal use of iron pyrites is in the manufacture of sulphuric acid, which is indispensable in the chemical industry. After roasting off the sulphur the residue is practically iron ore, and can be used as such for the making of pig iron. In the huge manufacture of explosives for purposes of the war, immense quantities of sulphuric acid were required, both in the United States and Canada, and during the four years beginning in 1915, not less than 877,923 tons of iron pyrites were extracted in Ontario, most of which was exported to the United States.

The pyrite resources of Ontario are very large, and can easily supply any demand likely to be made upon them. The ore exported comes in the main from the mines of the northwestern part of the Province, where the principal producing company during the period of the war was the Nichols Chemical Company. This company's mines are at Northpines, Goudreau and Mokomon, the last-named not yet having begun production.

From the stock pile at Wawa there was shipped a considerable tonnage of the fine granular pyrite found in the Helen iron mine. The Rand Consolidated Mines, Limited, also operated a deposit at Goudreau near those of the Nichols Company.

In the eastern part of Ontario, the Nichols Company owns and operates the pyrite mine and acid plant at Sulphide.

The Grasselli Chemical Company also manufactures sulphuric acid at Hamilton, and supplied its requirements in part from its own newly opened Caldwell mine at Clyde Lake in the township of Blithefield, but chiefly from the deposits of the Canadian Sulphur Ore Company, Limited, and Rand Consolidated Mines, Limited, at Queensboro and Goudreau respectively.

At Trenton the British Chemical Company operated a plant for the manufacture of war munitions, and made on the premises the sulphuric acid required, the pyrite being obtained from Canadian Sulphur Ore Company.

The ore marketed last year varied a good deal in sulphur contents, the extremes being 29 and 49 per cent. On the average, it ran between 35 and 36 per

cent. Considerable free or elemental sulphur from the United States was used in the acid plants of the Province in addition to pyrite.

A possible use for native pyrite is in the pulp and paper mills of northern and other parts of Ontario, which now exclusively use imported elemental sulphur. On the other hand, part of the pyrite imported from Ontario by the United States is used in the pulp and paper plants of that country.

Below is the list of producers of iron pyrites in 1918:—

IRON PYRITES SHIPPERS, 1918.

Name of Owner, Firm or Company.	Location or Name of Mine.	P.O. Address of Manager, etc.
Algoma Steel Corporation, Limited	Helen	Sault Ste. Marie.
Canadian Sulphur Ore Company, Limited	Queensboro	Toronto, Crown Office Building.
Bannockburn Pyrite Mining Co.	Mundic	Bannockburn.
Crowninshield, A. H.	Craig	Toronto.
Grasselli Chemical Co.	Caldwell	Flower Station.
Nichols Chemical Co., Limited, The	Goudreau	Goudreau.
	Sulphide	Sulphide.
	Vermilion Lake	Northpines.
Rand Consolidated Mines, Limited	Goudreau	Buffalo, N.Y., 853 Ellicott Square.
Stranahan Pyrites Co.	Fort Frances	65 Wall St., New York.
Sheffield Molybdenite Mining Co.	Chisholm	Enterprise.
Whalen, James	Lake Minnitaki	Port Arthur.

The acid manufacturing plants were:—

MANUFACTURERS OF SULPHURIC ACID, 1918.

Name.	Location of Plant.	Address.
British Chemical Company	Trenton	Trenton.
Grasselli Chemical Company	Hamilton	Hamilton.
Nichols Chemical Company	Sulphide	Montreal.

Mica

The characteristic mica of Ontario and Quebec is the amber variety, or phlogopite. Black mica, or biotite, and white mica or muscovite, are also found, but the deposits are comparatively of little commercial importance. Frontenac, Lanark and Leeds counties have produced most of the mica obtained in this Province, but merchantable mica has of late years been found and worked in Parry Sound and Nipissing districts.

There is more or less difficulty in collecting the statistics of mica production. When the demand is good, considerable mica is collected by farmers from their own lands, who dispose of it to local dealers, and of whose operations it is almost impossible to obtain a satisfactory report. Part of the mica obtained by regular mining is shipped to splitting works in the rough-cobbed form, and part is cleaned and trimmed on the spot.

The larger sizes of mica bring a much higher price per pound than the smaller sizes, but of late years the practice has come extensively into use of using the small sizes in building up so-called "micanite" sheets composed of mica and shellac, which can be cut and shaped to suit requirements. The chief use of mica is for insulation purposes in the manufacture of electrical machinery, mica being largely impervious to the electric current. Stains, cracks and inclusions reduce the value.

The amber variety is superior to the black, because of its greater resistance to the electric current, the iron content of biotite unfitting it for use in electrical apparatus. As compared with the white or muscovite variety, it is more flexible and not so hard, and consequently not liable to break or split when being bent or shaped. In thin-splitting quality it is the equal of either.

The production last year amounted to 215 tons, valued at $49,575. Of this the larger portion was "rough-cobbed" mica, disposed of to trimming works, where it is reduced in weight and at the same time increased in value, by being freed from rock, and cut and graded according to size. The output in 1917 was 435 tons, valued at $92,453.

The principal producers were the Loughborough Mining Company, Limited, owners of the well-known Lacey mine in Loughborough township, and Kent Bros. and Estate of J. M. Stoness, who worked deposits in the township of Bedford. The first-named company also purchased considerable "thumb-trimmed" mica from local producers and dealers.

Near Kearney, in the district of Parry Sound, Robert Elliott got out a quantity of amber mica, two crystals being of exceptional size. They measured 20 by 24 inches, and weighed 1,600 pounds.

The Finlan mine is situated on lot 7 in the first concession of Davis, Nipissing district. It was worked by D. Finlan and the firm of Clarke and Lounsbury, North Bay, in partnership, and a considerable quantity of mica obtained which was cut and sold for stove fronts. A little white mica was also won by Harry Kraft near Burk's Falls, Parry Sound.

The list of producers follows:—

MICA PRODUCERS, 1918.

Name of Owner or Producer.	Location or Name of Mine.	P.O. Address of Manager, etc.
Adams, J. H.	N. Burgess tp.	Perth.
Elliott, Stinson & Murphy	Kearney	Wilberforce.
Finlan, Clarke & Lounsbury	Davis tp.	North Bay.
Grierson & Sons, John K.		Perth.
Hoffman, W. J.	Lount tp.	Sundridge.
Kent Bros. and Estate J. M. Stoness	Bedford tp.	Kingston.
Kraft, Harry N.	Burk's Falls	Perth.
Loughborough Mining Co., Ltd.	Lacey mine	Sydenham.
McLaren, W. L.	North Burgess tp.	Perth.
Orser, S. H.	North Burgess tp.	Perth.
Tory Hill Marble & Mica Co.	Glamorgan tp.	Tory Hill.
Winning & Boyd		Ottawa, 90 Booth St.

Mineral Water

The only pure water is that which is distilled from the clouds and falls in the form of rain. Immediately upon reaching the ground it begins to take up, usually in minute quantity, the soluble substances with which it comes in contact. In consequence, all drinking water, whether procured from springs, wells, streams or lakes, contains more or less mineral matter. The presence of such ingredients distinguishes "hard" water from "soft," and renders it more agreeable to the taste. Waters more heavily charged with mineral substances and possessing medicinal or curative properties, are classed as mineral waters. The use of these is extensive and of long standing. Compounds of lime, magnesium, sodium and alkalies generally, also sulphur, carbonic acid and iron are common constituents in mineral waters, and the chemical composition largely determines the therapeutic or other use to which they are put. Heated waters rising from the ground generally contain a larger proportion of mineral matter than cold, and hence are frequently used for bathing purposes. Again, water only slightly mineralized may be used for drinking, with little or no reference to its medicinal properties, if any.

In some cases the waters are shipped from the spring in bulk and bottled elsewhere.

Owing to the war and the scarcity of labour, sales of mineral water in 1918 were much less than in pre-war times. The total quantity sold, as appears from the returns of those engaged in the business, was 298,498 imperial gallons, valued at $133,808. One company complains: "The passing of the prohibition laws killed the mineral water trade."

Following is a list of firms and companies producing mineral water in 1918:—

SHIPPERS OF MINERAL WATERS, 1918.

Producer.	Location of Wells or Springs.	Brand of Water.	P.O. Address of Manager, etc.
Allan's, Limited	Caledonia Springs	Caledonia Water	86 Dorchester St. W., Montreal.
Belanger, Arthur	North Plantagenet, George Lake.	St. George	Papineauville.
Borthwick, W.	Gloucester tp.	Borthwick	48 Fourth Ave., Ottawa.
Caledonia Springs Co., Ltd., The	Caledonia Springs and Bourget.	Magi, Duncan, Adanac.	360 Craig St. E., Montreal.
Carlsbad, Limited, The	Carlsbad Springs	Magi, Carlsbad, Lithia.	Carlsbad Springs.
Gillan, W. J.	Pakenham	Dominion	Pakenham, R.R. No. 4.
Gurd & Co., Limited, Charles	Caledonia tp.	Gurd's Caledonia Water.	76 Bleury St., Montreal.
Lyall, Trenholme & Macdonnell	Caledonia Springs	Beaver Brand Caledonia Water.	Montreal West.
Maple Leaf Aerated Water Co.	Caledonia Springs	Maple Leaf Water	Hawkesbury.
Sanitaris, Limited	Pakenham tp.	Sanitaris	Arnprior.

Natural Gas

The production of natural gas in 1918 was 13,075 million cubic feet,[1] valued at $2,498,769, a heavy fall from the output of 1917, when it was 20,026 million cubic feet, worth $3,220,123.

The gas fields of the Province are situated on the north and east shores of lake Erie, the oldest being the one in Welland county and adjacent territory, and the newest and most productive in the county of Kent. Natural gas is of much importance to the people of the southwestern peninsula, and has given rise to some unusual conditions in the social and economic life of that part of the Province. The questions involved are dealt with at greater length in following pages, and particularly in the Report of the Natural Gas Advisory Board.

The following figures show the work done and the results obtained in the gas fields during 1917 and 1918. The reasons for the much smaller output in the latter year are explained elsewhere.

TABLE XV.—NATURAL GAS STATISTICS, 1918.

	1917	1918
Gas wells drilled in year:		
Productive	121	66
Non-productive	52	31
Producing wells at end of year	1,905	1,849
Miles of pipe line	2,925 (a)	3,328 (a)
Workmen employed	780	872
Wages for labour	$537,946	$540,339
Gas production:		
Quantity (M. cu. ft.)	20,025,699	13,075,742
Value	$3,220,123	$2,498,769

(a) Including pipe lines of distributing companies.

The following producers of natural gas reported an output for 1918:—

NATURAL GAS PRODUCERS, 1918.

Name of Person or Company.	Producing Wells, Dec. 31, 1918.	Township.	P.O. Address of Manager, etc.
Aikins, W. J.	1	Onondaga	Dunnville.
Aldrich Gas & Oil Co., Limited	10	Rainham	Merchants Bank Bldg., Hamilton.
Azoff Natural Gas Co., Limited	1	N. Cayuga	Canfield.
Battle Natural Gas Co.	8	Moulton	Sun Life Bldg., Hamilton.
Bertie Natural Gas Co., Limited	8	Bertie	Ridgeway.
Brown, W. G.	1		Cainsville.

[1] These figures are slightly greater than those given by G. R. Mickle on page 68. The reason for this is that there are numerous small producers whose output, not being taxable, is not included in the latter's returns.

NATURAL GAS PRODUCERS, 1918.—*Continued.*

Name of Person or Company.	Producing Wells, Dec. 31, 1918.	Township.	P.O. Address of Manager, etc.
Canadian Gas Co., Limited	43	Raleigh, Romney, Tilbury E.	1426 Dime BankBldg., Detroit, Mich.
Canadian Steel Foundries, Limited.	8	Crowland	Thorold.
Canfield Natural Gas Co., Limited..	3	N. Cayuga	Canfield.
Chippawa Development Co., Ltd. ..	8	Willoughby	Chippawa.
Chippawa Oil and Gas Co., Limited.	40	Caistor, Canboro and Cayuga	Tavistock.
Coleman, J. A.	4	Wainfleet	Wellandport.
Darling Road Co-operative Gas Co.	6	Canboro, N. Cayuga.	Canfield.
Dominion Natural Gas Co., Ltd....	776	Lincoln, Wentworth Elgin, Norfolk and Haldimand (counties)	838 Marine Trust Co. Bldg., Buffalo, N.Y.
Beaver Oil & Gas Co., Ltd.[1]	23	Romney & E. Tilbury	do
Glenwood Natural Gas Co., Ltd.[1]	78	Raleigh, Romney & E Tilbury	do
United Gas Companies, Ltd.[1]	44	Gainsboro, Moulton & Wainfleet	do
Dunegan Oil & Gas Co.	1		Chatham.
Dunn Natural Gas Co., Limited....	19	Dunn	Dunnville.
Eastside Gas Co., Limited	6	Sherbrooke	Lowbanks.
Emerson, Troughton & Laidlaw....	4	Canboro	Attercliffe Station.
Empire Limestone Co.	4	Humberstone	19 Hudson Street, Buffalo, N.Y.
Fairbank, J. H., Estate of	1	Enniskillen	Petrolia.
Fletcher, J. I.	1	Binbrook	Hannon, R.R. No. 1.
Fisherville Gas Co., Nos. 1 & 3...	2	Rainham	Fisherville.
Gas & Oil Co. of Springvale, Ltd..	2	Walpole	Hagersville, R.R.No.4.
Hager, Ham	1	Onondaga	Middleport.
Hamilton Gas & Oil Co., Limited..	6	Seneca	Hamilton.
Hart & Harrington	2		
Hendee Natural Gas Co.	6	S. Cayuga	Cayuga.
Hoover, D. E.	1	Rainham	Selkirk.
Industrial Natural Gas Co., Ltd...	29	Bertie, Crowland and Humberstone	Thorold.
Jones, James S.	3	Dunn	Port Maitland.
Jones, Nelson	2	Canboro, Moulton	Attercliffe Station.
Kindy Gas Co., Limited	6	Rainham	South Cayuga.
Kindy & Sons, D.	5	Rainham	Selkirk.
Kohler, May & Hoover	14	Canboro	Selkirk.
Lalor, F. R.	5	Moulton	Dunnville.
Lalor & Yokes	10	Walpole	Dunnville.
Lamb, Alfred	4	Walpole	Selkirk.
Liesinger-Lembke Co.	1	Humberstone	Buffalo, N.Y.
Marshall, Jas.	11	Glanford, Seneca	Hamilton.
Martin, Edward	2	Dunn	Dunnville.
May, A. G.	3	Walpole	75 Melrose Ave., Hamilton.

[1] Subsidiary Company controlled from the head office of the Dominion Natural Gas Company, Limited, 838 Marine Trust Co. Building, Buffalo, N.Y.

NATURAL GAS PRODUCERS, 1918.—*Continued.*

Name of Person or Company.	Producing Wells. Dec. 31. 1918.	Township.	P.O. Address of Manager, etc.
McKillop, Kohler, May & Hoover Syndicate	4	Canboro	Selkirk.
Medina Natural Gas Co., Limited	24	Bayham	Chatham.
Mickle, Geo. T., & McKechnie, S.	5	Canboro	Ridgetown.
Midfield Natural Gas Co., Limited	7	N. Cayuga	32 Stinson St., Hamilton.
National Gas Co., Limited	72	Rainham, Seneca	119 Carrick Ave., Hamilton.
Niagara National Gas & Fuel Co. Ltd.	3	Humberstone	Fenwick.
North Shore Gas Co., Limited	8	Rainham	Merchants BankBldg., Hamilton.
Oil Springs Oil & Gas Co., Ltd.	6	Enniskillen	Oil Springs.
Ontario Gypsum Co., Ltd., The	4	Seneca	Paris.
Pilkington Bros., Ltd.	4	Crowland	St. Catharines.
Port Colborne-Welland Natural Gas & Oil Co., Limited	27	Seneca, Oneida, Onondaga	Port Colborne.
Producers' Fuel & Light Co.	1	Euphemia	Sarnia.
Provincial Natural Gas & Fuel Co. of Ontario, Limited, The	215	Welland (county)	Niagara Falls.
Richardson, J. W.	1	Seneca	Caledonia.
Richmond Gas & Oil Co., Ltd.	4	Bayham	Chatham.
Robinson Road Gas Co.	4	Canboro and Moulton	Dunnville, R.R. No. 4.
Sparham, A. F.	6	Glanford	Caledonia.
Sterling Gas Co., Limited	68	Humberstone, Wainfleet, Moulton and Sherbrooke	Port Colborne.
Stevensville Gas & Fuel Co.	3	Bertie	Stevensville.
Sundy Gas Well Co.	3	Canboro	Dunnville.
Union Natural Gas Co. of Ontario, Limited	125	Dover, Raleigh and Tilbury	Niagara Falls.
Vacuum Gas & Oil Co., Limited	2	Middleton	608 Lumsden Bldg., Toronto.
Vansickle, A. W.	2	Onondaga	Onondaga.
Wainfleet & Moulton Gas Co.	3	Middleton	Lowbanks, R.R. No. 1.
Welland County Lime Works Co., Limited	29	Wainfleet	Port Colborne.
Wedrick, M.	2	Walpole	Nanticoke.
Weylie & Benjamin	4	Glanford	Glanford Station, R.R. No. 2.
Total	1,849		

Following is a list of companies which pipe natural gas from the wells to the points of consumption or which distribute it there, but which do not themselves produce gas:—

PIPE LINE COMPANIES OR DISTRIBUTORS OF NATURAL GAS.

Name of Company.	M. cu. ft distributed in 1918.	Miles of Pipe Line Dec. 31, 1918.	Head Office or Address.
Central Pipe Line Co., Limited	150,578	41.7	Chatham.
Chatham Gas Co., Limited	1,280,396	25.0	Chatham.
Dominion Natural Gas Co., Ltd			838 Marine Trust Co. Bldg., Buffalo, N.Y.
Brantford Gas Co., Limited	336,211	58.9	
Ingersoll Gas Light Co., Limited	256,732	24.2	do do do
Manufacturers Natural Gas Co., Limited	515,235	5.6	do do do
Southern Ontario Gas Co., Limited	330,254	211.1	do do do
Woodstock Gas Light Co., Limited	183,995	44.0	do do do
Lake Shore Natural Gas Co., Limited	7,209	7.0	294 Baynes St., Buffalo, N.Y.
Mehlenbacher, J. H.	960	1.0	Nelles Corners.
Northern Pipe Line Co., Limited	897,110	29.5	P. O. Box 66, Niagara Falls.
Petrolia Utilities Co., Limited	259,254	12.0	Petrolia.
Rosehill Natural Gas Co., Limited	1,543	1.5	15 City Hall, Buffalo, N.Y.
Sarnia Gas Co., Limited	654,483	40.0	Sarnia.
Tilbury Town Gas Co., Limited	100,268	12.5	P. O. Box 66, Niagara Falls.
United Gas & Fuel Co. of Hamilton, Limited	1,036,398	335.0	72 James St. N., Hamilton.
Wallaceburg Gas Company	20,610	18.0	Wallaceburg.
Windsor Gas Co., Limited	1,961,211	74.2	235 Onelette Ave., Windsor.
Total	7,992,447	941.2	

During the year 1918 the above mentioned companies employed 237 men and paid $215,886 in wages.

A. E. Near, Inspector of gas wells for the Welland field, reports as follows, under date of January 14, 1919:—

Drilling operations in this district have not been as extensive as in former years. The Dominion Natural Gas Company of Hamilton, being the largest company in the district, drilled during the year 1918, 45 wells, of which 33 were producing and 12 non-producing, being an additional open flow production from the 33 wells of 3,465 M. cu. ft. They also purchased during the year the gas wells and pipe lines of the Kittinger Gas Company, and abandoned 65 exhausted wells, leaving them at the close of the year with 775 producing wells, from which they supply gas to upwards of 38,800 customers. This company is also at present drilling a well in the Selkirk gas field, and is now at a depth of 3,000 feet, in the hope of securing gas in the Trenton limestone.

The Provincial Natural Gas and Fuel Company of Niagara Falls, Ontario, during the past year drilled only 2 wells in the Welland county gas field, and at the close of the year had a total of 215 producing wells, from which they supply gas to about 7,400 customers, in the cities of Niagara Falls and Welland, town of Bridgeburg, and villages of Fort Erie, Stevensville and Crystal Beach. On account of a general decline in gas, this company refuse to supply any new customers, and have disconnected all furnaces and large heaters from their service line, in order, if possible, to ensure adequate supply for cooking and light-heating only. This company are also drilling a second deep well in the township of Bertie at Point Abino, and have it drilled to a depth of about 3,100 feet, or within about 200 feet of the Trenton.

The Sterling Gas Company of Port Colborne drilled during the year three wells, two of which are producing wells, having thus at the close of the year 68 wells, from which they supply upwards of 1,200 customers in the town of Port Colborne and the villages of Humberstone and Lowbanks. This company has been enabled to give a fairly good service of gas to its customers.

The Welland County Lime Works Company, Limited, of Port Colborne, during the year just closed, abandoned and plugged 27 exhausted gas wells, and have removed and disposed of all their pipe lines in the Wainfleet gas field.

J. W. Beno, Inspector for the Kent county field, summarizes the developments there for 1918 as follows:—

Owing to the unsettled condition of the gas question in Ontario, and the high cost of labour and well supplies, there have been fewer operations along development lines, and very little drilling has been done in this section during the year 1918. Only three oil wells and six gas wells were brought in, though ten dry holes were drilled in different parts of the area.[1]

Wells Abandoned and Plugged.

7 oil wells on Lot 2, Con. 8, Tilbury East, Kent Co.
6 oil wells on Lot 1, Con. 9, Tilbury East, Kent Co.
7 oil wells on Lot 1, Con. 5, Raleigh Tp., Kent Co.
2 oil wells on Lot 1, Con. 7, Raleigh Tp., Kent Co.
1 gas well on Lot 30, Con. 3, Romney Tp., Kent Co.
1 gas well on Lot 178, T.R.W., Romney Tp., Kent Co.
11 old oil wells in shallow field, Romney Tp., Kent Co.

There were two small pools struck which are outside of the former oil and gas fields:—

(1) A light well of both oil and gas, on Lot 20, Con. 7, Mersea tp., Essex county, which was struck at 1,223 ft. There were two other wells drilled on the same lot which came in dry holes.

(2) A well of 50,000 ft. of gas was struck on Lot 22, Con. 10, Raleigh tp., Kent county; a bed of dry salt 125 ft. thick was found below the gas sands.

(3) A 165-ft. bed of dry salt was found in the deep well on Rondeau Park, Harwich tp., Kent county.

Summary.

The total number of gas wells being operated in the counties of Essex and Kent is 282, and the total number of oil wells, 14.

There are a number of oil wells which are not being operated, which will have to be abandoned and plugged if not put in operation soon.

The total length of gas lines of all sizes is about 900 miles.

There are 9 drilling rigs at work now in this section.

Natural Gas Legislation

Administration of the law and regulations regarding natural gas is now in charge of E. S. Estlin, Commissioner of Gas, whose office is in Chatham, the centre of the Kent gas field. Mr. Estlin supplies the following notes on the several steps taken by Provincial authority to ameliorate conditions there:—

Owing to the unusual severity of the winter of 1917-1918 the supply of natural gas drawn from the Kent county fields failed to meet the requirements, and in certain localities distress and suffering ensued. The government was appealed to in order that some prompt remedy might be found. As a result, certain restrictions were immediately placed upon the use of natural gas in industrial plants in localities where the shortage was most acute, as a temporary measure of relief. This relieved the situation, and the supply was increased for the homes.

The Natural Gas Act, 1918

Then followed the passing of the Natural Gas Act of 1918, on the 6th day of February, 1918, which placed the administration of natural gas matters in the hands of the Ontario Railway and Municipal Board with authority to act. The Board held several hearings which revealed the necessity of enquiring into further details, and the writer was called in on the 8th of April, 1918, by the Department of Lands, Forests and Mines, to make an examination of the conditions under which gas was being produced, transported, sold and consumed.

After due consultation with the Minister of Lands, Forests and Mines and G. R. Mickle, Mine Assessor, it was decided that Mr. Mickle and the writer should make a preliminary

[1] For details of drilling, see report of E. S. Estlin, Commissioner of Natural Gas, pp. 65, 66.

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),677
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4,752

SKETCH MAP SHOWING DISTRIBUTION OF NATURAL GAS BY PIPE LINE FROM ONTARIO GAS FIELDS.

To accompany Vol. XXVIII, Part 1, Report, Ontario Bureau of Mines, 1919.

Gas pipe lines represent the dimensions in inches. Two compressor stations are located on the Kent field, and three on the Eastern field at Blackheath, Caledonia and Dunnville. Scale 10 miles.

review of the situation and go over the ground for a few days together for the purpose of outlining the method of the work.

The following towns and cities were visited and the conditions therein noted: Chatham, Sarnia, Windsor, Wallaceburg, and Walkerville. About a week was spent in looking over a few factories in each locality, and a plan was laid down for checking up all the particulars of industrial consumption of gas dependent upon the Kent county wells. Mr. Mickle then returned to Toronto, and the writer proceeded with the work.

Industrial Use of Gas from Kent Field

All the industries using gas from the Kent field in the following towns were visited and the data concerning processes, monthly consumption, price, supply, pressures, service, alternative fuel, etc., were obtained: Chatham, Blenheim, Windsor, Walkerville, Wallaceburg, Tupperville, Sarnia, Dresden, Ridgetown, Petrolia, Oil Springs, Merlin, Tilbury, Wheatley, Coatsworth, Tecumseh (and district), Hamilton, Brantford, Galt, Paris, Woodstock, Ingersoll, Leamington, Kingsville, Essex, Comber, Woodslee, Corunna and Brigden. Besides these were numerous small places where gas was used industrially, bringing the number up to about forty.

During this inspection 444 factories were visited and particulars as to efficiency of burners, economy of appliances, operations served, price, consumption, etc., carefully checked up and noted. Principal among the industries using gas were found the following: milling, implement manufacturing, vehicle manufacturing, bakeries, meat packers, brick and tile manufacturing, woodworkers, public utilities, food products, machine shops, dairies, cigar manufacturing, greenhouses, printers, textile workers.

The total amount of gas consumed by all industries furnished from the Kent field in 1917 was 9,124,752,000 cubic feet, and the amount used for domestic service for the same period was 6,105,000,000 cubic feet, making a total delivery from the Kent wells of 15,229,752,000 cubic feet for 1917.

The industrial consumption was divided up as follows:—

Industrial Consumption Kent County Gas in 1917.

Town	Total Industries	Agricul. Implts.	Vehicles	Bakeries	Packers	Brick and Tile Mfg.	Wood Workers	Public Utilities	Food Products	Machine Shops	Dairies	Cigar Mfgs.	Printers	Textiles	Gas Engines	Boilers	Average Rate	Total Consumption M. cu. ft.
Chatham	43	1	5	4	1	4	4	3	3	6	4	1	2	2	3	32	13.9	829,866
Blenheim	8	...	...	1	...	3	...	...	1	...	...	...	...	...	2	6	15.	31,309
Windsor	69	1	7	1	...	4	3	2	12	22	2	4	2	8	4	30	25.81	697,988
Walkerville	27	...	7	...	...	1	...	...	5	11	...	...	...	3	1	12	.....	716,819
Wallaceburg	12	...	...	1	...	2	...	...	...	3	...	1	...	2	5	5	18.45	1,413,903
Tupperville	3	...	...	...	...	...	...	...	...	...	...	1	...	...	2	1	21.66	2,642
Sarnia	21	1	...	1	...	1	1	2	1	7	1	...	1	2	7	14	21.4	2,097,046
Dresden	12	...	...	1	...	3	...	1	1	3	...	...	...	...	4	6	18.84	47,904
Ridgetown	12	...	...	1	...	...	...	1	1	2	...	2	...	2	5	7	18.57	23,447
Petrolia	6	...	...	...	...	1	...	...	...	2	1	...	...	...	1	5	17.	214,341
Merlin	5	...	...	1	...	1	...	1	...	...	1	...	...	...	3	1	15.	30,665
Tilbury	8	...	...	...	...	1	1	...	1	2	...	...	...	...	3	4	16.8	80,250
Wheatley	7	...	...	1	...	1	...	1	...	1	...	...	1	...	7	...	25.	2,776
Coatsworth	2	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1	12.5	43,037
Tecumseh and Dis.	22	...	...	...	...	7	...	1	4	1	...	1	...	1	9	11	17.3	363,113
Hamilton	19	3	...	1	...	...	...	2	...	9	1	...	...	3	...	7	25.47	1,940,489
Brantford	34	5	1	2	...	...	1	...	3	14	...	...	2	5	15	...	44.4	58,257
Galt	39	...	...	...	...	...	2	...	...	26	1	...	1	9	7	3	39.6	30,243
Paris	23	2	2	...	...	...	1	...	2	6	...	1	3	3	12	2	41.3	55,678
Woodstock	14	1	...	...	...	...	3	...	1	4	1	...	...	2	...	5	37.8	4,468
Ingersoll	4	...	...	1	...	...	...	...	1	2	...	...	...	...	...	4	25.	104,918
Leamington	20	...	...	...	...	2	1	2	3	1	...	9	...	1	...	20	17.2	161,229
Kingsville	10	...	...	2	...	...	...	2	1	...	...	2	...	1	1	7	23.5	100,677
Essex and Dist.	24	1	...	1	...	7	2	1	2	...	...	...	1	2	10	12	22.8	123,687
Total Industries	444	15	22	19	1	39	19	19	42	122	12	22	13	46	102	195	.....	9,124,752

Prominent among these consumers were the following large users, each with a consumption for the year of over 100,000,000 cubic feet:—

		cu. ft.	Price per M. cu. ft.
Chatham	Chatham, Wallaceburg & Lake Erie Railway	162,000,000	12c.
	Chatham Gas Co.	125,681,000	7½c.
Courtright	Western Salt Co.	217,833,000	15c.
Hamilton	Dominion Glass Co.	406,000,000	25c.
	Steel Co. of Canada	1,402,701,000	21½-22½c.
Petrolia	Canadian Oil Co.	195,065,000	17c.
Sarnia	H. Mueller Co.	106,258,000	15c.-13½c.
	Imperial Oil Co.	1,880,273,000	12c.
Walkerville	Dominion Forge & Stamping Co.	263,000,000	12c.
	Hiram Walker & Sons	212,000,000	12c.
Wallaceburg	Dominion Sugar Co.	844,282,000	12c.
	Dominion Glass Co.	555,346,000	12c.
Windsor	Canadian Salt Co.	478,866,000	12c.
	Total	6,443,305,000	

These thirteen corporations used more gas than all the homes put together, and the whole amount of gas used in the year for industrial purposes would have supplied 46,500 families for the same period.

The effect of price on gas as a fuel for steam boilers and gas engines is shown in the following schedule:—

Average price per M cu. ft.	No. of Boilers	No. Gas Engines
Cents.		
12.5	1	1
13.9	32	3
15.0	6	2
15.0	1	3
16.8	4	3
17.3	11	9
17.0	5	1
17.2	20	.....
18.45	5	3
18.57	7	5
18.84	6	4
21.4	14	7
21.66	1	2
22.8	12	10
23.5	7	1
25.0	4	.....
25.0	.....	.....
25.47	7	.....
25.81	30	4
37.8	5	.....
39.6	3	7
44.4	.....	15

It would seem that the use of gas under boilers declines as the price rises, and the number of gas engines increases.

A careful scrutiny of the operations carried on in the factories where gas was an important factor in heating, power supply, or in special manufacturing processes, revealed the fact that wasteful methods were being employed in many cases, and the full value of the heat units was not being utilized. Apart from unsuitable burners and inattention to same, the using of gas for steam boilers supplying power or heat is very extravagant, and is only made possible by the extremely low price.

The same may be said of such purposes where gas was used for metal furnaces, forges, cupolas, incinerators, glass melting, drying and evaporating plants, tobacco factories, greenhouse heating, lime-burning, brick and tile manufacturing, bakeries, etc. It was found that many primitive forms of burner were in use; in one case a large steam boiler was being fired by means of two two-inch pipes projected into the fire-box without any means of introducing

or mixing air or forming a proper combustion mixture. Some baking ovens were found using gas in a similar way. In only two cases were automatic regulating burners in use, where the proper amount of air was proportioned to the pressure and volume of gas used.

Amongst the smaller factories information regarding the amount of gas used monthly and the price paid was unreliable, not from any wish to mislead, but because the value of gas as a fuel was not fully appreciated, and in many cases the record was defective and the receipts lost or destroyed. It was found that many concerns had established themselves within reach of the gas lines so as to take advantage of this cheap and efficient fuel.

Many of the large users were procuring all the gas they required at fifteen cents per M cubic feet, which meant the equivalent of coal at $3.60 per ton delivered at the fire door, if full application could be made of the heat units in the coal. This comparison is worked out as follows: In 1,000 cubic feet of natural gas there are approximately 990 British Thermal Units costing 15 cents, and in 24,000 cubic feet (the equivalent of one ton of coal), there are approximately 23,760,000 British Thermal Units costing $3.60.

Throughout the summer of last year, 1918, the allotment of gas to industries was carefully watched, monthly permits were issued for limited amounts and these amounts reduced each month where possible, and the re-modelling of appliances went on as quickly as materials could be delivered and workmen procured. It was found that the work of administering the gas Act and supervising the operations generally over so large an area could not conveniently be carried on from Toronto, and the Office of Natural Gas Commissioner was created early in September, 1918, subject to the jurisdiction of the Ontario Railway and Municipal Board, with headquarters at Chatham. By concentrating the work in one office and by having the representative of the government stationed near the centre of the gas field, it has been possible to handle the various phases of the gas question to better advantage, and to learn more thoroughly the needs of those interested in the production and use of natural gas.

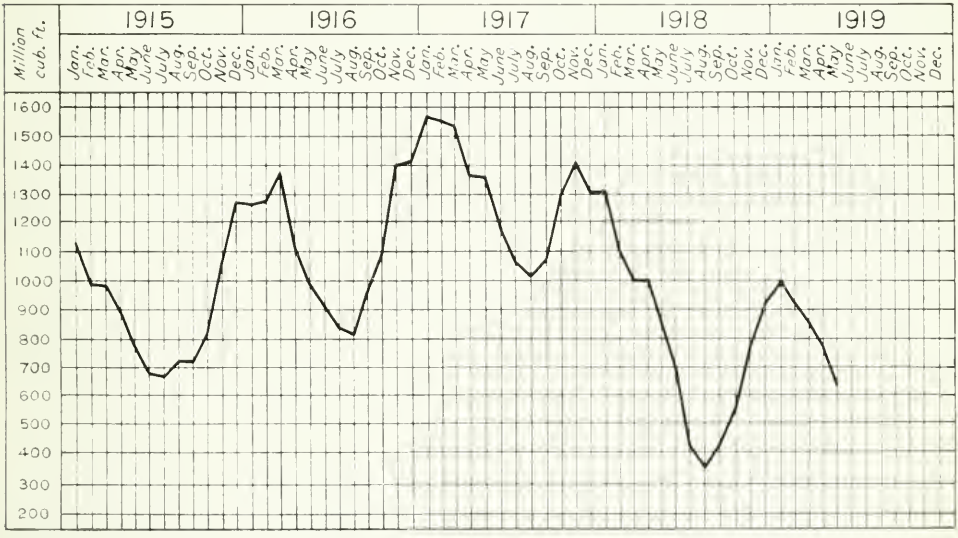


Diagram showing output in million cubic feet of Kent gas field.

Appointment of Natural Gas Advisory Board

In working out solutions of the many problems presented by the gas question it became apparent that some changes in the Natural Gas Act of 1918 were desirable, and the Minister of Lands, Forests and Mines called a convention of those interested from the several points of view. This convention was held in Chatham on the 29th of November, 1918, and included representatives of the gas producers, gas distributors, and urban and rural consumers. These bodies held separate meetings, and selected delegates from whom the Minister might choose the personnel of a Natural Gas Advisory Board.

The result of the convention was that the following gentlemen were selected by the Minister to deliberate and make recommendations for meeting the problems connected with the natural gas question: Alex. McKee, Sandwich, Judge Stanworth, Chatham, W. S. West, Woodstock, T. J. Mahoney, Wentworth county, and E. R. Gray, Hamilton, representing the

rural and urban interests, and Perry A. Little, Buffalo, H. R. Davis, Buffalo, C. E. Steele, Port Colborne, P. S. Coate, Chatham, and T. P. Pinckard, of Windsor, representing the natural gas interests. Eight meetings of this Board were held and recommendations were embodied in a report[1] which was submitted to the Minister.

The Natural Gas Act, 1919

The Legislature being then in session, Hon. Mr. Ferguson submitted a measure which was in due course enacted under the title The Natural Gas Act, 1919. This repealed the Act of 1918; also subsections 2 to 5 of section 24 of the Mining Tax Act. The new Act places the control of natural gas affairs in the hands of the Minister of Lands, Forests and Mines, who is authorized to delegate his powers for administrative purposes to the Commissioner of Natural Gas.

Many interesting changes have taken place in the gas industry, chiefly in the Kent field, since the passing of legislation in the spring of 1918, the principal one being the readjustment of the market consequent upon restrictions made necessary by the declining supply; and it is significant to note from the accompanying diagram how the consumption of gas from the Kent field has varied during the years covered by the same.

Conditions in the Several Fields

Tilbury Field.—In reviewing the conditions generally throughout all the gas fields, it is evident that two factors were responsible for the absence of any material gas shortage last winter (1918-19); first, the rationing process in force during the late summer under the permit system as applied to the industrial use of gas, and, secondly, the extremely mild winter. While the total consumption out of the Kent field was approximately six billion cubic feet less than in 1917 (or nearly equal to the whole domestic consumption for that year), there were times when it was extremely difficult to maintain a service pressure at Sarnia, Chatham, Petrolia, Wallaceburg, and Windsor. Several times it was necessary to resort to preferential service or the cutting off of certain large consumers, such as churches, etc., in order to build up pressures.

One great difficulty in restoring service pressure at the end of a long line is that when a heavy and sudden pull comes upon a pipe-line and the pressure at the delivery end is quickly reduced, the friction increases so rapidly, as the pressure lowers, that it takes a struggle to build it back and pack up the line again. There was enough evidence during these several drops in temperature to show that the field could barely carry the peak load in an unusually fine winter with six billion less of a load upon it. However, a fairly good service was maintained through the winter; but the protracted spring kept the domestic consumption up much later than usual.

The following table is interesting as showing the average pressures maintained at the high pressure service stations at the outskirts of the cities mentioned during January, February and March:—

	Average Pressures			Average Field Temperature
	Sarnia	Chatham	Windsor	
January	77	49	75	28
February	44	27	43	27
March	51	54	51	32

During the present summer everything possible is being done to augment the failing supply of gas. In the Tilbury field the writer took the open flow measurements on June 27th and 28th of 43 wells in the heart of the field. These wells, drilled in at different dates during the last eleven years (some of them as late as 1917), the total original production of which was 97,300,000 cubic feet per day, now only show 20,600,000 cubic feet, with the measurements taken at the most favourable time.

Water is encroaching rapidly upon the wells, trapping off the gas, and the aim of the Department is to co-operate with the field companies and maintain a system of uniform pumping, so that the water levels will be kept down to a minimum. A careful record is being kept of the water output and the pumping dates, and it is expected that the water conditions will be revealed and any defective casing or packing detected.

Since the passing of the Natural Gas Act, 1919, and for some time previous, the producing companies have been getting together in a highly commendable way, devising ways and means for bettering the service. They feel that precautions taken at the time of drilling will not only save many wells but whole fields.

[1] Printed on pp. 193-227 of this volume.

It is quite probable that in the Tilbury field careless methods may have resulted in the water passing into the gas sands in wells that have been drilled a few feet too deep, and while plugging may have been resorted to, it would be easy to spoil several wells by plugging too high in the well and yet low enough to protect the pay sand above the plug, forgetting the sand below the plug, which sand might reasonably communicate with other wells. These things are hard to locate, but time may bring some of them to light.

The treatment of gas wells in the Tilbury field is a continuing problem, and it will take all the care and nursing that is possible to bestow upon it to keep production up to the ideal.

Dover Field.—In the Dover field conditions are different—the wells are about a thousand feet deeper and drilling is very costly, so that the most modern engineering methods only are employed. These wells now cost nearly five dollars a foot for drilling alone.

Eastern Field.—In the eastern field (known as the Welland-Haldimand field), the wells have been drawn upon for thirty years; they are not so deep as the Tilbury wells, and water conditions are not so severe. The territory having been about all tested, and most of it drilled, the field has settled down to a uniform decline, and the methods of management are much the same over the field. This field has reached a point where restriction or control of consumption is practically automatic, and the gas is, and has been for some years, confined chiefly to domestic use.

The Licensing Regulations

Under the provisions of the Act of 1919 the various operations in gas transactions are put under license. The prospector procures a license and makes returns showing where his leases and locations are. This protects him, because the records show whether the ground is worth his while or not, and it also protects any producer near whose wells he wishes to locate.

The driller takes out a license, and provides proper records by keeping correct logs and measurements and samples of rock cuttings; the advantage of this is obvious, for no reliable records have been kept covering the areas drilled, and many a man has thrown his money away which could have been saved if rock conditions had been better understood.

The producer takes a license, and is protected by the conditions imposed upon the former, and the distributor takes a license as well as the pipe-line company. So the whole industry is classified and recorded, and no outside interference can take place without very good cause. Highways through which the gas line must pass receive their share of protection, and altogether the system of licensing should work out to the benefit of all concerned, and bring about better conditions in the gas fields.

General Notes

The purchase of the Canadian Gas Company's field by the Union Natural Gas Company is one indication of the concentration of effort, and the bringing of these two important sections of the Tilbury field under the same method of treatment will make for increased production.

In the eastern fields, not many changes of this kind have taken place. A few small producers whose arrangements for disposing of their output were not satisfactory, or whose contracts with larger companies have run out, are being assisted in finding a market by this office.

One incident worthy of record in the events of the past year, and one of great interest to the consumers of Tilbury gas, is the persistent effort on the part of the Glenwood Natural Gas Company in treating their gas for the reduction of the sulphur content. This work is being carried on at the company's plant at Glenwood in the Kent gas field, which was put into regular commission on October 16th, 1918, after four years of research work had been carried on at great expense. The advantage was felt by the consumers in the abatement of the odour. The purifiers have been almost constantly in service since started, with the exception of a short interruption during June, when repairs had to be made to one of the heaters which had become corroded.

Well-drilling in 1918 and 1919

During the year 1918 the following development work was carried out in spite of the difficulties experienced in obtaining well materials and labour:—

Owner	Lot	Con.	Township	County	Per Diem		Depth	Date	
					Oil	Gas			
Union Natural Gas Co.	2	13	Raleigh...	Kent ...	.....	½ Mill	1376	Jan. 21	
	1	13	"	"	.....	.....	1395	Apr. 18	water
	2	3	Dover W..	"	200	3½ Mill	3277	May 20	
	12	10	Tilbury E.	"	.....	1½ Mill	1386	June. 6	
	3	2	Dover W..	"	Show	.....	3332	Aug. 9	dry
	6	2	Tilbury E.	"	.....	.....	3372	" 30	
	3	3	Dover W..	"	Good	Show	3560	Oct. 8	shot
	3	3	"	"	Show	Small	3346	" 26	
	2	3	"	"	"	"	3315	" 28	shot
Glenwood Nat. Gas Co.....	Gore	B	Romney ..	"	.....	1½ Mill	1320	Feb. 9	
	3	13	Raleigh...	"	.....	½ "	1364	Apr. 26	
	30	3	Romney ..	"	.....	.....	1378	May 18	
	20	10	Raleigh...	"	.....	1/10 Mill	1590	" 30	125′ salt
	22	7	Mersea ...	Essex ..	Show	1/10 "	1223	" 30	
	Govt. Pk.		Harwich..	Kent ...	.....	.....	4010	Aug. 26	165′ salt
	20	7	Mersea ...	Essex ..	Show	Show	1322	Sept. 2	
	20	7	"	"	.....	.....	1604	" 25	
Symmes & Co.....	1	5	Dover W..	Kent ...	.....	.....	3209	Apr. 24	
Canadian Gas Co	13	3	Tilbury E.	"	.....	.....	3204	" 30	
Dally & Co.....	4	3	Romney ..	"	.....	.....	1307	May 28	
Northern Gas & Gasoline Co., Ltd.....	2	10	Amabel ..	Bruce ..	.....	1/5 Mill	1440	July 1	
" " "	3	10	"	"	.....	.....	started		

Up to the time of writing the completed development work for 1919 consists of the following:—

Owner	Lot	Con.	Township	County	Per Diem		Depth	Date	
					Oil	Gas			
Union Natural Gas Co.	2	3	Dover W..	Kent ...	.....	7½ Mill	3060	May 18	
	3	3	"	"	.....	8 "	2972	" 31	
	13	13	Tilbury E.	"	.....	1/5 "	1378	June 3	
	11	13	"	"	.....	1/5 "	1383	" 14	
Glenwood Natural Gas Co. .	236	TRS	Mersea ...	Essex ..	.....	.....	1080	Jan. 7	
	19	11	Raleigh ..	Kent ...	.....	.....	1545	Feb. 9	130′ salt
	1	12	"	"	.....	1½ "	1368	Mar. 21	
	13	2	Mersea ...	Essex ..	.....	½ "	968	Apr. 10	
	15	2	"	"	.....	1/10 "	967	June 18	
United Develop. Co.....	1	5	Dover E ..	Kent ...	.....	.....	3709	Mar. 28	
Vacuum Oil and Gas Co....	24	1	Chatham..	"	.....	.....	412	June 3	
Castle Oil and Gas Co.....	....	....	Euphemia	Lambton	.....	.....	1712	No. 2	
	....	....	.....	.....	.....	.....	1611	No. 3	

Dominion Natural Gas Company drilled 45 wells, of which 33 are producing and 12 dry. The open flow production of the 33 new wells is 3,465,000 cu. ft. This company abandoned 65 exhausted wells.

Provincial Natural Gas Company drilled 2 wells in Welland county.

Welland County Lime Works abandoned and plugged 27 exhausted wells.

Benjamin Canby drilled one producing well in the township of Wainfleet.

Port Colborne-Welland Natural Gas Co. drilled 3 producing wells in the Seneca field.

Sterling Natural Gas Company drilled 3 wells, 2 producing and 1 dry.

Matt. Hoover and Elder drilled 5 light producing wells.

Work in progress throughout the different gas fields has reached the following stage:—

PRESENT DRILLING OPERATIONS, 1919

Owner	Lot	Con.	Township	County	Per Diem Oil	Per Diem Gas	Depth	Date
Union Natural Gas Co.	....	....	Dover W.	Kent	.....	.....	2900	July
" " "	....	....	....	"	.....	.....	2100	
" " "	....	....	Tilbury ..	"	.....	336	1385	
" " "	....	....	Dawn	Lambton	.....	.....	.....	Derrick up
	....	....	Tilbury ..	Kent	.....	.....	2	rigs cleaning out
Glenwood	....	....	Harwich..	"	.....	.....	1200	
"	28	2	Romney ..	"	.....	350		
"	....	....	Leamingt'n	Essex ..	.....	.....		Just starting
Medina Natural Gas Co.	Procunier	Farm	Bayham ..	Vienna Field..	.....	.....	1340	
Imperial Oil	1	8	Mersea ...	Essex ..	.....	.....		
	13	3	Tilbury E.	Kent ...	.....	.....		
Vacuum Oil and Gas Co.	1	2	Dover W. .	"	.....	.....		
Glen. Halley Co.	12	1	Romney ..	"	.....	.....		
Castle Oil Co.	....	....	Euphemia	Lambton	.....	.....	.....	Rig on location
Oil Springs Oil and Gas Co.	....	....	.....	.....	.....	.....		
Dominion Nat. Gas Co.	....	....	Long Point	.....	.....	.....	3100	
" "	....	....	....	"	.....	.....	445	
" "	....	....	Seneca ...	.....	.....	.....	.....	Just started
" "	....	....	Canboro ..	.....	.....	.....	300	
" "	....	....	Melinda ..	.....	.....	.....	500	
" "	....	....	Binbrook .	.....	.....	.....	500	
" "	....	....	N. Walsingham	.....	.....	.....	1000	
" "	....	....	Woodhouse	.....	.....	.....	1000	

That all the efforts to improve conditions in the gas fields so as to prolong the production of natural gas to the utmost, and at the same time encourage search and development work, are fully warranted there can be no question, for the records show that approximately 80,000 homes depend upon it for household comfort.

It is hoped that some further new production may be looked for this year from the Dover field where the Union Natural Gas Co. brought in two wells recently of seven and a half million and two and a half million cubic feet respectively (open flow measurement).

In Euphemia the Castle Oil Company have secured indications in their two wells recently drilled in with 300 and 500 thousand respectively.

The Provincial Natural Gas Company are drilling a deep test well in the Welland-Haldimand field, with the hope that more pay may underlie the shallow drilling in that field.

Two wells have been drilled in near Hepworth in Grey county, but particulars are too meagre for forming an opinion.

Apart from the fuel value of natural gas to the communities within reach of the wells, there should always be borne in mind the direct benefit to those who own the land carrying the gas wells. As an indication of this the following table shows what four producing companies pay out per annum in rentals:—

Land rentals	178,586	acres.	$68,217 12
Well rentals	102,438	"	71,067 25
	281,024	"	$139,284 37

There should be added to this the advantage of gas "without charge" enjoyed by most of the owners of the land, which collectively runs into a large sum each year.

LIST OF CITIES, TOWNS AND VILLAGES IN THE PROVINCE OF ONTARIO SUPPLIED WITH NATURAL GAS.

Attercliffe
Ancaster
Acacia
Aylmer
Bridgeburg
Binbrook
Blackheath
Blenheim
Brigden
Baldoon
North Buxton
South Buxton
Belle River
Brantford
Belmont
Bartonville
Chippewa
Crowland
Crystal Beach
Caledonia
Caisterville
Cedar Springs
Coppleston
Corunna
Courtright
Chatham
Charing Cross
Coatsworth
Comber
Cottam
Clanbrassill
Cayuga
S. Cayuga
Cainsville
Cheapside
Chedoke
Dunnville
Dundas
Dover
Dealtown
Dresden
Deewsville
Delhi
Dorchester
Dutton
Elfrida
Essex
Eden
Elmstead
Fonthill
Fletcher
Ford
Fisherville
Frome
Fingal
Fenwick
Fort Erie
Galt
Guilds
Humberstone
Hamilton
Hannon
Highgate
Hagersville
Ingersoll
Iona
Jeannette's Creek
Jarvis
Kingsville
Kohler
Lythmore
Logierait
Leamington
Lynne Valley
Lynedoch
London
Lambeth
Low Banks
Merritton
Muirkirk
Mull
Morpeth
Mandarin
Merlin
Maidstone
Marshville
Mount Salem
Niagara Falls
N. Ridge
Nelles Corners
Nanticoke
North Oxford
Ouvry
Olinda
Oil Springs
Oil City
Onondaga
Oldeastle
Palmyra
Petrolia
Paris
Putnam
Power Glen
N. Pelham
Point Abino
Point Edward
Ridgeway
Ryckmans
Rodney
Ridgetown
Rondeau
Romney
Ruscomb
Ruthven
Rainham Centre
Rosehill
Stevensville
Sherkston
Stromness
Sinclairville
Shetland
Sarnia
Sombra
Sandwich
Selkirk
Springvale
Simcoe
Straffordville
Shedden
St. Catharines
St. George
St. Jacobs
St. Williams
Thorold
Tilbury
Tecumseh
Tupperville
Tillsonburg
Talbotville
Valetta
Vittoria
Vienna
Welland
Wellandport
Woodburn
Wilkesport
Wallaceburg
Wheatley
Woodslee
S. Woodslee
Windsor
Walkerville
Willow Grove
Woodstock
Wilton Grove
Wallacetown
West Lorne
Winger
Port Purwell
Port Colborne
Port Maitland
Port Lambton
Port Ryerse
Port Dover
Port Royal
Port Rowan

Natural Gas Industry in 1918

Since the year 1907, when a tax was first placed on natural gas, the collection of the same has been under the charge of G. R. Mickle, Mine Assessor. Mr. Mickle has also had supervision of the inspection of gas and oil wells carried on for the purpose of enforcing the law for the protection of gas and oil fields from abandoned and improperly plugged wells, etc. His duties have brought Mr. Mickle into close contact with the natural gas situation, and the following analysis of the same as it was in 1918 will be found of interest:—

The total production of natural gas in Ontario in 1918 was 13,067.4 million cubic feet. The output of the respective fields was as follows:—

	Mill. cu. ft.	
Welland-Haldimand-Norfolk field	3,375.0 or 25.8	per cent.
Kent field (old)	8,965.0 or 68.7	"
Kent field (new), Dover Tp.	351.6 or 2.7	"
Elgin field	338.8 or 2.6	"
Lambton field	37.0 or 0.2	"
Total	13,067.4 or 100.	"

This marks a decline of about one-third of the production of the previous year, due mainly to the breakdown of the supply from the Kent field, and the consequent curtailment of the output. This matter was fully dealt with in the last report of the Bureau of Mines. In the other fields there was also a decline in the yield of natural gas.

The old field in Welland, Haldimand, Norfolk and Brant counties has now produced 64,807 million cubic feet. The output shown above includes an estimated amount from a number of very small producers who make no returns. This field is showing a continuous decline in rock pressures and output.

From the Kent field the production is about 41 per cent. less than in 1917. The total production from this area to the end of 1918 is 89,995 million cubic feet. It still remains the most important known supply of natural gas in Ontario. According to the calculation given in the last Report of the Bureau, the total gas which might be obtained from this field was originally about 173,000 million cubic feet; there would thus be left 83,000 million cubic feet. This cannot, however, be drawn off at any rate of production that seems desirable, owing to the danger from salt water, as fully explained in the Bureau's last Report. This danger is not merely threatening but is actually being realized, and in some parts of the field has shut off the production entirely. Nothing but drastic restriction of the output can prevent a repetition of the disastrous experience in the Essex field.

Analysis of the Domestic Consumption of Natural Gas

The whole question of the regulation of the production and consumption of natural gas is under discussion and consideration everywhere. The regulation is difficult owing to the peculiar nature of the substance, the outstanding features being that there is no way of preventing by any physical means the owner of a gas lease drawing off his neighbour's gas, and that natural gas is so easily destroyed, and is not capable of reproduction. All these circumstances make the case for public control stronger than with any other commodity. Any information as to mode of use is accordingly of value. Since natural gas is used for two separate purposes in the home, viz., cooking and heating, it seemed desirable to estimate what proportion of the total yearly consumption in the average household is for cooking and heating respectively. Where natural gas is not available these two purposes are very often served by totally different sources of heat, varying greatly in price.

The table given below is made from information furnished by the gas companies supplying the places mentioned. It applies to the year 1917.

Place	Average No. of meters in use	July and August consumption per meter	Total consumption per meter per year	Estimated per cent. used for cooking	Rate paid per M.	Total paid per meter per year	Total domestic consumption
Windsor	7,320	10.5 M	200 M.	45	30c.	$60	1,464,000 M.
Sarnia	3,268	7.5	166	38	30	50	542,488
Chatham	3,122	8.1	176	39	25	44	549,472
Blenheim	473	7.7	185	35	(av.) 23	43	87,505
Ingersoll	1,186	5.02	129	33	(av.) 38	49	152,994
Ridgetown, Highgate, Dutton, etc	1,471	7.12	157	38	(av.) 27.7	43	230,947
Kingsville	481	7.0	166	36	25	41	79,846
Kent Co. farm houses	145 (portion only)	11.7	200	49	15	30	29,000
Leamington (flat rate), average number of consumers	768	16.2	342	40		24 per house	262,656
Total consumers	18,234			304			3,398,908
Deduct flat rate	768					Deduct flat rate	262,656
Total meters	17,466			304/8 = 38 percent		Total by meter =	3,136,252

To estimate the quantity of gas used for cooking throughout the year, the consumption for July and August is taken as a basis, it being assumed that no one will use any gas for heating in these months, and that, moreover, for the sake of comfort, as little gas as possible will be used for any purpose. An arbitrary addition of fifty per cent. to the consumption for July and August has been made in the estimate for the other ten months of the year, to make allowance for the extra amount of cooking in the colder months, due to the nature of the food being somewhat different in the very hot weather and requiring less cooking. For example, taking the first city on the list (Windsor), we have:—

Consumption per meter in July and August....	10.5 M. (5.25 M. per month)
Estimated consumption in other 10 months....	78.7 M.
Total estimated	89.2 M.

As the total consumption per year is 200 M. this means that 45 per cent. is used for cooking. If it were assumed that exactly the same amount was used for cooking in the other ten months of the year as in July and August, which certainly would not be correct, we would have a consumption of 5.25 M. per month throughout the year, or a total of 63 M. per year, consequently, the percentage used for cooking would be 32 instead of 45, or 13 per cent. less, and this is the difference for the city showing the highest percentage used for cooking. If the calculation is made for Ingersoll, which shows the lowest percentage used for cooking, making no allowance for extra use of gas for cooking outside the very hot months, the percentage is 23 instead of 33 as shown in the table, or a difference of 10 per cent. The arbitrary addition therefore makes a difference of 10 to 13 per cent. and is, it seems reasonable to assume, nearer the actual fact than if the figures for July and August were taken as truly representing the whole year. It will be noticed that if the high percentage shown as used for cooking in Kent county farm houses is excluded—as it is only represented by a relatively insignificant number of meters—and an equal weight is assigned to the average obtained in each place regardless of the number of meters, the average is 38 per cent. used for cooking. If the number of meters in each city or town were taken into consideration, the average would be somewhat higher. The estimate of 38 per cent. as the amount used for cooking in the average household may therefore reasonably be taken as within a very few per cent. of the actual truth.

It is of course obvious that it is the same to the householder whether he pays a certain uniform moderately high rate for gas regardless of the purpose for which it is used, or a high rate for gas used for cooking and a lower one for the heating gas. If for instance gas[1] used for cooking is computed at 90 cents per M., that being the lowest price at which artificial gas is sold anywhere in Ontario at the present time, and if moreover the gas for heating were sold at 20 cents per M., or the equivalent of less than half the price of coal at the present time, the result to the householder would be just the same as paying the uniform rate calculated below, viz., 46.6c. per thousand.

38	per cent. at	90 cents	= 3,420
62	per cent. at	20 cents	= 1,240
100			4,660

or 46.6 cents per thousand is the equivalent uniform rate.

While it is exactly the same to the householder who consumes the *average* amount of gas, the smaller householder undoubtedly uses a higher percentage of his gas for cooking than the larger householder does; consequently the equivalent moderately high uniform rate is more advantageous to the smaller consumer, and moreover must tend to enforce careful use and prolong the life of the field. In the table given above it can be seen that there are 17,466 domestic meters and the amount of gas passed through these is 3,136,252 M. The average amount of gas used per householder is therefore 179 M.

Influence of Variations in Temperature on Domestic Consumption

As we have had two winter seasons in succession showing great departures from the normal, that of 1917-18 being unusually severe and 1918-19 very mild, the question of the influence of temperature on the domestic consumption of gas naturally arises, especially as we have seen that 100—38 or 62 per cent. of the gas used in the average household is for heating. Some interesting information is given on this point in Bulletin 102, United States National Museum, p. 48. The statement is made there that the demands for heating service "are practically proportional to the number of degrees that the atmospheric temperature is below 70." It is further stated that the demand for gas for heating in Louisville was

[1]This artificial gas moreover contains less than 500 B.T.U's. efficiency per cubic foot, compared with about 1,000 for the natural gas under consideration.

5,500,000 cubic feet per month for each degree of the mean monthly temperature below 70° F. The detailed information given shows that in all 2,594 million cubic feet were delivered to Louisville in one year, of which 1,674 million was independent of the temperature, and 920 million was used for heating. That is, the percentages used for cooking and heating were respectively 65 and 35. Comparing this with 38 and 62 in the districts served by Kent gas, we notice that the percentage used for heating is almost twice as great, and as this is the demand that fluctuates so immensely, all the difficulties due to the peak load described in this bulletin are accentuated in Ontario. Taking the figures for 1917 as a basis, the estimated domestic use of Kent gas is 4,372 million cubic feet. Of this we have seen 38 per cent., or 1,661 million, is used for cooking, and the balance, or 2,711 million, for heating. In addition to this 1,310 million feet were used in heating offices, stores, public buildings, etc., where the consumption is also governed by the temperature, making 4,021 million cubic feet in all used for heating. The ratio of gas used for heating in the district supplied by Kent gas and in Louisville is accordingly 4,021 to 920, or 4.4 to 1 approximately. The ratio of gas used for cooking, on the other hand, is 1,661 to 1,674, or practically the same. This is probably directly proportional to the population served, assuming the same mode of living.

To show the difference in consumption of gas caused by temperature, on the basis of the Louisville experience, and applying the same to Kent and surrounding district, we may take three sets of figures into consideration, viz., (1) the normal temperature or average monthly temperature for a considerable number of years, taking only the colder months, (2) the mean monthly temperature for the same months in the mild season of 1918-19 and (3) for the severe winter of 1917-18. These are given by the Meteorological Office for Chatham, which may be taken to represent the average of the district served by Kent natural gas, as follows:—

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Normal season	52	39	27	25	22	34
Season 1918-19	55	44	36	31	30	37
Season 1917-18	45	37	20	12	22	38

It is seen that in the season 1918-19 every month shows a mean monthly temperature higher than the normal, thus:—

October	3	degrees	above normal
November	5	"	"
December	9	"	"
January	6	"	"
February	8	"	"
March	3	"	"
Total	34	"	"

This is equivalent to 34 degrees for one month as far as the effect on gas consumption is concerned. If the consumption is governed by the temperature in the same way as shown by the table giving the consumption in Louisville, then the saving in the season of 1918-19 due to the mild weather, as compared with a normal season, would be 5.5 x 34 x 4.4=823 million cubic feet. Comparing the mild season 1918-19 with 1917-18, it can be seen that the equivalent difference for one month in the mean monthly temperature would be 59 degrees, corresponding to a difference in gas consumption of 5.5 x 59 x 4.4 or 1,428 million cubic feet. This is the equivalent of 70,000 tons of coal in heating power, and is a measure of the difference between a mild season and a severe one.

In order to establish the relation between temperature and gas consumption from experience gained in Ontario, the following table was supplied through the kindness of the Dominion Natural Gas Company.

RELATION BETWEEN TEMPERATURE AND GAS CONSUMPTION

Simcoe Area, Winters of 1917-18 and 1918-19

	1917			1918			1918			1919		
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Domestic Consumption	23,576 M	37,915 M	53,297 M	59,527 M	62,908 M	43,936 M	21,105 M	29,863 M	41,922 M	49,174 M	48,972 M	43,868 M
Number of Consumers	2,774	2,768	2,763	2,752	2,797	2,751	2,754	2,732	2,704	2,716	2,717	2,715
Consumption per meter	8.50	13.66	19.29	21.63	22.49	15.97	7.66	10.93	15.17	18.11	18.02	16.15
Used regardless of Temperature, per meter.	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46
Used for heating	5.04	10.20	15.83	18.17	19.03	12.51	4.20	7.47	11.71	14.65	14.56	12.69
Mean Temperature of month	47	38	23	13	18	33	51	47	34	28	28	33
Mean Temperature subtracted from 65 degrees	18	27	42	52	47	32	14	18	31	37	37	32
Consumption per meter per degree difference in M	.28	.38	.38	.35	.40	.39	.31	.42	.38	.40	.39	.40

Average consumption per meter per month per degree below 65 F. = 373 cubic feet.

Simcoe district was taken in preference to places supplied by Kent gas, as the supply was satisfactory there, whereas there was a serious shortage in towns supplied by Kent gas during part of the time covered by the table. An inspection of the analyses of the natural gas from Haldimand and Norfolk, which is supplied to Simcoe, given in the Twenty-third Report of the Bureau, shows that the heating power of this gas is almost exactly the same as that of the Kent gas. The mean monthly temperatures given are supplied by the Meteorological Office from the Welland station, this being the one that was considered to represent the Simcoe district best.[1] In compiling this table from the observation and experience of the Dominion Natural Gas Company, 65 degrees was fixed as the mean monthly temperature above which no gas is used for heating, instead of 70° F., as was done in the Bulletin referred to above. It will be observed that there is a marked agreement in the average monthly consumption per meter per degree below 65° F., and that the average of all these is 373 cubic feet. If then the total number of domestic meters through which the Kent gas passes were known, the difference caused by a mild season can be calculated from our own experience.

The first table given above in which the percentage used for cooking is estimated, accounts for 3,399 million cubic feet which is passed through 18,234 meters, including for this purpose Leamington. Taking the figures for 1917 as a basis, with a total non-industrial consumption of 5,829 million cubic feet, we have 3,399 million accounted for by the meters shown in the table; to this add 1,310 million for the amount estimated as used in public buildings, etc., making 4,709 million in all; the difference between this amount and 5,829, or the total non-industrial consumption, is 1,120 million, which is passed through or might be passed through domestic meters in places not mentioned in that table. Most of these are in towns east of Kent county where the rates are higher, consequently it would be reasonable to assume 150 M. as the average annual consumption per meter; this would account for 7,466 more meters. To arrive at the influence of the temperature on the consumption of gas in offices and public buildings where it is used for heat only, a correction must be made for the amount of gas ordinarily used in cooking. This was found to be 38 per cent., consequently if we assume as before an average consumption of 150 M. per meter and deduct 38 per cent., this leaves 93 M. per meter for the equivalent number of meters that would be required for this amount of gas for heating; accordingly the 1,310 million feet should supply 14,086 meters.

We have then as follows:—

Number of domestic meters shown in table	18,234
Number of domestic meters estimated, not shown	7,466
Estimated equivalent number of domestic meters	14,086
Total	39,786

or approximately 40,000 meters. It has been seen already that the difference in temperature between the season 1918-19 and the normal in the Chatham district is equivalent to 34 degrees for one month, that the average consumption per meter per month varies 373 cubic feet for each degree below 65° F., and the total number of meters is estimated at 40 000. The saving in gas consumption for 1918-19 over the normal year was therefore 40,000 x 373 x 34=507 million cubic feet.

A reference to the table above giving the total domestic consumption in a number of cities shows that this amount is about nine-tenths the domestic consumption of Sarnia or Chatham in a whole year, and this saving was effected in the six colder months, when probably two-thirds or more of the total domestic consumption of the year takes place, so that the effect of the mild season as a relief to the gas supply was equivalent to cutting a city with a population of twenty thousand or so off the lines for the winter or time of gas shortage. In like manner, as seen above, the influence of a severe season such as 1917-18 would be almost equal in the opposite direction, and would be similar in influence on the gas supply to extending the lines to another Chatham or Sarnia. A consideration of these facts will show the precarious nature of the gas supply.

Influence of Wind on Consumption of Natural Gas

It is evident of course that more fuel would be required to heat a house when a strong wind is blowing than would be needed if there were no wind and the same atmospheric temperature. Just what influence the wind has in this respect we have no means of determining, but as there never is a windless month, it is only departures from the normal that need be considered. The table given is supplied by the Meteorological Office from the wind measuring station at the Eastern Gap, Toronto. It is the nearest one to Simcoe, and is known to represent the Simcoe conditions closely. This is a continuous wind measuring station, and the table

[1] As the figures for the monthly consumption are obtained from meter readings made some days before the end of the month, the mean monthly temperatures given are not for the calendar month, but for a month ending on the 24th, in each case.

gives all possible information about the wind during the months in question. It will be noticed that the average hourly velocity of the wind for the month does not differ much from the normal, the greatest variation from the normal in any month in the twelve months given being 3.9 miles per hour. Possibly gales have more influence on the gas consumption than slight variations in the monthly velocity, but they never last long enough to affect the consumption of gas for the month seriously.[1] Thus taking the greatest velocity for 24 hours in the record of the two seasons given, viz., 1,002 miles or the equivalent of a gale of 42 miles per hour for the whole 24 hours, and even supposing this doubles the gas consumption for that day, it would only add about 3 per cent. to the monthly consumption or make the figure for the average consumption per meter per degree difference .35 for instance instead of .34. Comparing the various months in the two seasons with reference to the wind as can easily be seen from the charts, we see that:—

(1) October, 1917, should show higher gas consumption than October, 1918.
(2) November, 1917, should show lower gas consumption than November, 1918.
(3) December, 1917, should show higher gas consumption than December, 1918.
(4) January, 1918, should show higher gas consumption than January, 1919.
(5) February, 1918, should show about the same gas consumption as February, 1919.
(6) March, 1918, should show lower gas consumption than March, 1919.

Of all these actually the last is the only one that shows an agreement between the relative amount of wind and gas consumption. We must conclude therefore that whatever influence the wind has on individual days, the variations in the average monthly velocities from the normal are not sufficiently great, or the gales do not last long enough, to appreciably affect the monthly consumption.

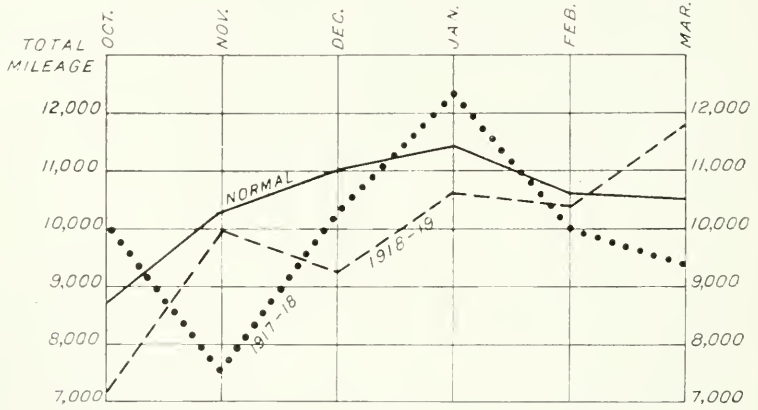


Chart showing total mileage of wind with departure from normal.

[1]It will be noticed that the mileage of 1,002 in 24 hours registered in January, 1918, is the greatest on record at this wind-measuring station, which has been established for ten years.

SUMMARY OF WIND VELOCITY AT EASTERN GAP, TORONTO

Months	Total mileage for month	Difference from average	Average hourly velocity	Difference from average	Greatest mileage in 24 hours	Difference from average	Highest on record	Maximum hourly velocity	Highest on record
1917. October	10,114	+1,395	13.6	+1.6	674	+102	674	41	55
November	7,543	-2,755	10.5	-3.9	477	-201	817	30	50
December	10,316	-697	13.9	-1.2	831	+143	831	47	47
1918. January	12,344	+914	16.6	+1.3	1,002	+223	1,002	54	57
February	10,017	-568	14.9	-0.7	809	+41	976	54	59
March	9,384	-1,158	12.6	-1.5	659	-26	953	56	60
October	7,110	-1,609	9.5	-2.5	380	-192	674	29	55
November	9,957	-341	13.8	-0.6	657	-21	817	43	50
December	9,231	-1,782	12.4	-2.7	750	+62	831	47	47
1919. January	10,664	-766	14.3	-1.0	614	-165	1,002	47	57
February	10,462	-141	15.6	0.0	664	-104	976	45	59
March	11,790	+1,248	15.9	+1.8	749	+64	953	40	60

Petroleum

There was a notable increase in the output of crude petroleum in 1918 as compared with the previous year, the yield being 10,106,615 Imperial gallons as against 7,104,700, an excess of 42 per cent. As will be seen from the figures given below, showing production in the several pools or areas, the new field in Mosa township was responsible for most of the increase. Thamesville fell away considerably, and there were decreases in Dutton and Bothwell, also in the old field of Lambton county, the decline in the last-named being a little over 9 per cent.

Charles Jenkins, a veteran oil operator of Petrolia, points out in a letter to the Deputy Minister of Mines that the winter of 1917-18 was an exceptionally cold one, beginning early and lasting well into March. In consequence pumping was stopped in the majority of wells for a long time, and to this cause was due the greater part of the loss in Lambton. In Tilbury the increase was due to drilling in the district proper and by deliveries from the wells drilled in Dover township for gas, which subsequently yielded some oil as well.

The Mosa yield, 3,814,591 Imperial gallons, was equal to 90 per cent. of that of Lambton, and constituted over 37 per cent. of the entire production. Mr. Jenkins remarks that the Mosa field is a peculiar one, being in shape very narrow—what in the language of oil operators is called a "sucker-rod" belt. Deep drilling was undertaken in Mosa, and shortly after the end of the year, a well begun by F. J. Carman had reached a depth of 1,600 feet. Some 38 wells in all were put down during the year, 41 wells were abandoned, and 37 were still in operation.

One set of tools was working in the old Petrolia field, one fairly good well having been brought in, and another being under way.

The production of the several fields for the years 1917 and 1918 was as follows:—

PETROLEUM PRODUCTION BY FIELDS, 1917 AND 1918.

Field.	1917 Bbls.	1918 Bbls.	Increase Bbls.	Decrease Bbls.
Petrolia and Enniskillen	74,267	65,467	.....	8,800
Oil Springs	46,902	44,671	.....	2,231
Moore township	6,282	6,367	85	.....
Sarnia "	4,494	3,438	.....	1,056
Plympton "	579	412	.....	167
Bothwell	29,682	29,116	.....	566
Tilbury	10,041	25,228	15,187	.....
Dutton	2,941	1,875	.....	1,066
Onondaga township	383	1,186	803	.....
Belle River	.....	447	447	.....
Mosa township	20,999	108,988	87,989	.....
Thamesville	6,420	1,565	.....	4,855
Total	202,990	288,760	104,511	18,741

John Scott, Inspector of oil wells, reports the following data regarding these wells as at December 31, 1918:—

OIL WELLS IN ONTARIO, 1918

Municipality.	In Operation		Not operated	Abandoned
	Pumped.	Baled.		
Sarnia Township	158	.....	36	.....
Plympton "	29	.....	26	30
Moore "	140	.....	67	71
Enniskillen "	1,957	310	898	283
Oil Springs and vicinity	1,496	.....	90	3
Bothwell	278	.....	.....	.....
Thamesville	15	.....	29	.....
Dawn	.....	.....	53	10
Euphemia	56	.....	.....	.....
Brooke	10	.....	.....	.....
Dutton	151	.....	19	33
Mosa	37	.....	.....	41
Indian Reservation	.....	.....	11	.....
Middlesex	.....	.....	.....	7
Total	4,327	310	1,229	478

At Flesherton in the county of Grey drilling into the Trenton limestone was carried on, and both oil and gas were shown to be there, but not in paying quantities. Some years ago there was a similar experience at Milton in the county of Halton. It is by no means impossible that somewhere in old Ontario, north of the present fields, an important reserve of petroleum may yet be found in the Trenton limestone.

Still further north, in the Silurian and Devonian limestones which succeed the Archean rocks in the coastal plain of James Bay, and which from what is known of them appear to correspond to the oil-bearing formations of the southwestern peninsula, there is reason for believing that the existence of oil and gas, also salt, is a possibility. Indian stories of the occurrence of oil, and the escape of gas in the beds of some of the north-running rivers are scarcely proofs, but a comparison of the fossiliferous evidence so far as it has been collected affords stronger grounds for entertaining a hope that these valuable substances may yet be located in that area.

Dr. W. A. Parks, of the University of Toronto, and a well-known paleontologist, a number of years ago examined the fossil-bearing limestones at points on the Abitibi, Moose, French and Kwataboahegan rivers, and regarded it as probable that a fringe of Silurian deposits "lies on the flank of the upland, at least in places, while the major portion of the Paleozoic area is composed of rocks comparable with the Upper Helderberg."[1] After a brief investigation of fossiliferous strata on the Kwataboahegan river, a tributary entering the Moose river near its mouth from the west, Dr. Parks without question referred these rocks to the Devonian series, and regarded them as probably equivalent to the bottom of the Upper Helderberg, while in some cases the assemblage would denote the Oriskany. As bearing on the possible presence of oil and gas, Dr. Parks remarks:—

[1]Bur. Min. Rep., Vol. XIII, 1903, p. 180.

Oil and gas are known to occur in the rocks of this age in southern Ontario, and there is no reason to doubt that similar deposits may be met with north of the height of land. The rocks are very rich in organic remains. . . . The decay of such enormous numbers of organisms must have given rise to large quantities of petroleum. Whether this product is entirely dissipated, remains for future explorations to reveal.[1]

When Dr. Parks wrote these words, the Kwataboahegan river was a long way indeed from older Ontario so far as transportation facilities were concerned. It is still a distant region, but the construction of the Temiskaming and Northern Ontario and Transcontinental railways has brought it a good deal nearer. It would be decidedly in the public interest to continue the study of these limestone formations in order that more light may be obtained on their age and extent and their degree of correspondence with the oil and gas-bearing rocks of southwestern Ontario, also on the most favourable localities for use of the drill.

The price of crude oil advanced during the year by successive raises from $2.48 to $2.78 per barrel, the average for the year being about $2.705. This is without the bounty paid by the Dominion Government on crude oil produced in Canada, which is at the rate of 1½ cents per Imperial gallon or 52½ cents per barrel. In 1917 the average price per barrel was $2.34.

Less than 1 per cent. of the crude oil distilled in Ontario is of domestic origin, the great bulk of it being imported from the United States. In compiling the figures for workmen employed and wages paid, only the proper proportion of each can be credited to Ontario oil. On this basis, the number of employees engaged in the oil refining industry last year was 84, and the wages paid $93,810.

Salt

The quantity of salt made in Ontario has not varied greatly during the last three years. In 1916 the output was 128,935 tons, in 1917 138,909 tons, and in 1918 131,726 tons. The product of last year consisted of land salt 2,041 tons, coarse salt 24,930 tons, fine salt 53,908 tons, table and dairy salt 34,014 tons. To this should be added 16,221 tons the salt equivalent of the brine used in the chemical works of the Canadian Salt Company at Sandwich in making caustic soda and bleaching powder. The number of employees in the salt works was 302, who were paid wages amounting to $275,842. The value of the salt produced was $1,287,039.

The vast beds of limestone and salt which occur in proximity to one another on the Canadian as well as on the U. S. side of the St. Clair and Detroit rivers present an opportunity for the establishment of large industries for the manufacture of chemicals. An almost endless series of products can be produced from these substances, many of them of first-class importance in the arts. Other basic re-agents are sulphuric acid and ammonia; for the former there is abundance of pyrite in Ontario, and the latter can be had wherever cheap electric power, such as that from Niagara Falls, can be applied to the atmosphere. Caustic soda, bleaching powder, chlorine, sodium carbonate, etc., are essential for manufacturing purposes. Soda ash is used in glass, soap and paper making, in the refining of oils, the manufacture of cleansing materials and in numerous other ways. Salt cake is employed in the refining of nickel matte. Niagara electric power is used by the Canadian Salt Company in its chemical plant. Brunner, Mond Canada Limited has also recently completed

[1] Bur. Min. Rep., Vol. XIII, 1903, p. 191.

extensive works at Amherstburg to operate the Solvay system in the production of soda ash and related chemicals.

Last year a gas well was drilled on lot 22 in the tenth concession of Raleigh township, in the county of Kent, a light flow of gas being struck. Below the gas sand, a bed of dry salt 110 feet thick was penetrated. The well had a total depth of 1,800 feet, and the salt was found at about 1,200 feet. A dry hole was also sunk on Rondeau Park in the same county, a sandy peninsula jutting out into lake Erie about 5,000 acres in extent which contains a remnant of the rich hardwood forest that once covered this part of Ontario. The hole was put down to a depth of 4,010 feet, and at about 1,200 feet a bed of dry salt 125 feet in thickness was passed through. The existence of these salt beds shows that the limit of the salt area lies considerably to the east of its former supposed location, or at any rate that extensive deposits of salt can be found a long distance from the shores of lakes St. Clair and Huron.

The list of companies producing salt in 1918 is as follows:—

SALT COMPANIES, 1918.

Name of Owner, Firm or Company.	Location of Wells or Works.	P.O. Address of Manager, etc.
Canadian Salt Company, Limited	Windsor Sandwich	Windsor.
Dominion Salt Company, Limited	Sarnia	Sarnia.
Elarton Salt Works Company, Limited	South of Egremont Road, Warwick tp.	Hydo Park.
Exeter Salt Works Company, Limited	Exeter	Exeter.
North American Chemical Co., Ltd.	Goderich	Clinton.
Ontario People's Salt and Soda Co., Limited	Kincardine	Kincardine.
Western Canada Flour Mills Company, Limited	Goderich	Goderich.
Western Salt Company, Limited	Courtright	Courtright.
Wingham Salt Works (Young Estate)	Wingham	Wingham.

Strontium

J. E. Wilder of Montreal began to develop a deposit of celestite on lot 7 in the tenth concession of the township of Bagot by making an open cut and sinking a shaft about 20 feet in depth. He placed about 200 tons of the mineral on the dump. Finding it difficult to obtain a market for the product, Mr. Wilder discontinued operations. None of the celestite was shipped away.

Talc

Last year's output of talc, crude and ground, amounted to 17,465 tons, worth $246,691. Of this 1,044 tons were shipped as crude, the remainder, 16,421 tons, being ground and refined into a variety of commercial grades. The crude talc was exported to the United States, and the ground products also found their chief market in that country. Part was marketed in Canada and part also in Cuba. The production was in excess of that of 1917, when 2,398 tons of crude were exported and 13,678 tons were ground. In the mining and milling of talc 43 men were employed who received $41,936 in wages.

Madoc, in the county of Hastings, is the seat of the talc industry. The deposits are in the vicinity of the town, and there are two mills for grinding it there. One of these is owned and operated by Geo. H. Gillespie and Company, Limited, and the other by the Anglo-American Talc Corporation. The capacity of the former is 40 tons in 24 hours, and of the latter 28 tons. The progress of the industry may be deduced from the following figures showing the shipments during the last five years:—

TABLE XVI.—PRODUCTION OF TALC, 1914-1918.

Year	Shipments			Value
	Crude	Ground	Total	
	tons	tons	tons	$
1914	1,269	8,866	10,560	74,583
1915	1,720	9,285	11,005	85,325
1916	3,665	8,145	11,810	111,489
1917	2,398	13,678	16,076	179,554
1918	1,044	16,421	17,465	246,691

Talc occurs in three forms, namely, foliated, fibrous and massive. There are deposits of all three varieties in Ontario, but only the massive is worked, this being the most desirable kind and most amenable to fine reduction. Massive talc is often known as soapstone, and from early ages has been a favourite material for the carver. It occurs in large beds and lenses in rocks of the older crystalline formations, and is also often associated with igneous rocks rich in magnesia.

The talc production of the world is placed at about 300,000 tons per annum, the bulk of it being of the inferior qualities. Chlorite, quartz, dolomite, pyrite, magnetite and other impurities reduce the value of talc, quartz being particularly objectionable for some of the finer uses. High grade talc indeed is of rare occurrence, and the output is comparatively insignificant in quantity. Italian talc enjoys a high reputation for its purity, and is used extensively in toilet and medicinal preparations.

The largest producer of talc is the United States, New York State containing important deposits at Gouverneur. It is also obtained in France, Bavaria, Norway, Brazil, India, and other countries.

The uses of talc are numerous. It is carved and sawn into slabs: it resists heat and ordinary acids or chemicals, and possesses much dielectric strength. It is used for lining fireplaces and stoves, for sanitary and electric appliances and for sinks, tanks and table-tops. As "French" or "Spanish" chalk it is employed by tailors and engineers for marking purposes, and is also used for gas tips. On being heated it becomes hard and durable, and will take on a good polish.

As ground material, talc finds its greatest use. Both the massive and fibrous varieties are extensively employed as a filler in the manufacture of paper. The rubber industry also affords a large outlet for ground talc. The fine-grained qualities, free from grit, are used in the preparation of face powders and cosmetics and in the making of soap. Ground very fine, it is used as a lubricant, either alone or mixed with graphite. Talc is employed in dressing skins and leather, for foundry

facings, for sizing and bleaching cotton cloth, in the manufacture of paints and wallpaper, for insulating electric wires, as a base for dynamite, as a body for medicines used in tablet form, for making imitation stone, for conserving fruits and vegetables, as a protection against the chafing of pneumatic tubes in automobile and bicycle tires, and for a hundred other purposes. In fact, it is doubtful whether any other single mineral finds so many applications in the arts and industries.

The following companies and firms were engaged in the raising and preparing of talc last year:—

TALC OPERATORS, 1918.

Firm or Company.	Location of Mine or Works.	Address of Manager, etc.
Anglo-American Talc Corporation, Ltd.	Madoc	Madoc.
Cross and Wellington	Huntingdon tp.	Madoc.
Henderson Mines, Limited[1]	Huntingdon tp.	Madoc.
Geo. H. Gillespie and Company, Limited	Madoc (grinding mill)	Madoc.

[1]The Henderson mine was operated under lease by Cross and Wellington until April 27, 1918, when they sold the lease to Henderson Mines, Limited.

Mining Divisions

Below is given a statement summarizing the business done in the offices of the several Mining Recorders, nine in number. There are twelve Mining Divisions, but in three cases two Divisions are at present in charge of a single Recorder. These are Temiskaming and Coleman, N. J. McAulay acting as Recorder for both; Port Arthur and Kowkash, under the care of J. W. Morgan; and Gowganda and Montreal River, of which H. E. Sheppard had charge at the close of 1918, but in which he has since been succeeded by M. R. Morgan, formerly Recorder for the Kowkash Division. Mr. Sheppard returned from active military service overseas, and resumed his former position on the death of Arthur J. Browning in April, 1918.

Since the opening of the prospecting season of 1919, a branch office has been established at Swastika for the southern part of Larder Lake Division. H. G. Ginn, assistant to Recorder Hough, is in charge.

T. A. McArthur, North Bay, is Inspector of Mining Recorders' Offices, also of Crown Land Agencies.

TABLE XVII—RECEIPTS FROM MINING DIVISIONS, 1917-18.

Mining Division.	Name and Address of Recorder	Receipts, 1917-18.				
		Purchase Price.	Permits.	Miner's Licenses.	Recording Fees.	Total.
		$ c.	$ c.	$ c.	$ c.	$ c.
Kenora	W. L. Spry, Kenora	1,184 10	.....	483 00	575 50	2,242 60
Port Arthur	J. W. Morgan, Port Arthur	3,415 56	10 00	2,069 00	1,405 75	6,900 31
Kowkash[1]	" "					
Sault Ste. Marie	W. N. Miller, S.S. Marie	241 50	.....	1,300 00	2,569 00	4,110 50
Timiskaming	N. J. McAulay, Haileybury	4,623 11	170 00	3,771 50	3,547 50	12,112 11
Coleman Special.	" "					
Larder Lake	J. A. Hough, Matheson	12,782 92	.....	1,776 00	6,940 75	21,499 67
Gowganda	H. E. Sheppard,[2] Elk Lake	2,921 84	410 00	1,209 00	5,486 75	10,027 59
Montreal River	" "					
Porcupine	G. H. Gauthier, S. Porcupine	3,699 66	90 00	1,687 00	1,558 51	7,035 17
Parry Sound	H. F. McQuire, Parry Sound	.....	.....	203 00	124 00	327 00
Sudbury	C. A. Campbell, Sudbury	6,109 02	170 00	2,069 00	2,300 25	10,648 27
	Total	34,977 71	850 00	14,567 50	24,508 01	74,903 22

[1] The head office of Kowkash Division was removed to Port Arthur, January 28th, 1918, up to which date Mining Recorder was M. R. Morgan.

[2] Succeeded A. J. Browning, who died April 30th, 1918. Mr. Sheppard was transferred to other duties, and was succeeded by M. R. Morgan, 19th May, 1919.

Reports from Mining Recorders

Kenora.—Mining claims recorded 48, cancelled 31; miner's licenses issued 54, renewed 46; letters received 1449, written 1353.

Port Arthur.—Mining claims recorded 66, claims cancelled 30; miner's licenses issued 102, renewed 242; letters received 2335, written 2099. Recorder J. W. Morgan remarks:—

> The year 1918 has been a slack year. No new discoveries of importance have been made in this division. A large amount of assessment work has been done, but owing to the high wages paid for workmen in the cities, very little prospecting has been carried on. With the return of the soldiers from Europe I have no doubt many of them who were formerly prospectors will again take up that employment.

Sault Ste. Marie.—Claims recorded 199, cancelled 25; miner's licenses issued 162, renewed 102; letters received 515, written 385. Recorder W. N. Miller reports that there was much activity in his Division during the year, due principally to the vigorous working of pyrite deposits by the Nichols Chemical Company at Goudreau on the Algoma Central Railway; the Algoma Pyrite Company were also developing their pyrite deposit, northwest of and adjoining the Goudreau properties. Two miles northeast of Goudreau the Algoma Steel Corporation own a large body of pyrite; between these two deposits about 200 claims were staked for gold. A molybdenite claim was staked in township 51, range 28 on the main line of the Canadian Pacific railway at mileage 76.

Sudbury.—Claims recorded 168, cancelled 69; licenses issued 133, renewed 281, letters received 1016; written 889. C. A. Campbell, Mining Recorder, remarks that labour during the year was high in cost and almost unobtainable, also that as all the prospectors who were physically fit had enlisted, a few only were left to carry

on the work. Such prospecting as had been done was mostly on the old ground west of Shining Tree, and on the nickel range. On the Wasapika gold mine in MacMurchy township, and the Holding and Buckingham claims in Asquith township work was done and machinery installed. Russell Cryderman discovered a barite vein in the township of Penhorwood alongside the Canadian Northern railway track.

Temiskaming: Coleman Special.—Claims recorded 184, cancelled 91, licenses issued 245, renewed 853: letters received 1300, written 1159. N. J. McAulay, Recorder, reports that there was considerable activity in the townships of Eby and Catharine, where a number of claims were staked for gold: also that a good deal of development work was going on in the township of Pacaud for gold, apparently with good results.

Larder Lake.—Claims recorded 423, licenses issued 106: renewed 292. The activities of the year centred in three areas, namely, Lightning River, Kirkland Lake and Boston Creek. In Lightning River about 250 claims were recorded, but two-thirds of them were allowed to lapse, and little or no work was done there during the winter of 1918-19. The staking at Kirkland Lake was due to the fact that all development at depth in that area had proved satisfactory. Some discoveries of merit were made at Boston Creek during the year, and the indications were that prospecting would extend through to Larder Lake, where the first gold rush took place.

Gowganda.—Claims recorded 52, cancelled 30: licenses issued 11, renewed 68: letters received 394, written 397. Recorder H. E. Sheppard reports very little prospecting during 1918, but a good deal of development work, particularly on the following properties, Castle Mining Coy., Walsh claims, T. C. 177 Mining Coy., Collins claims, Crews-McFarlane Mining Coy., Reeve-Dobie.

Montreal River.—Claims recorded 293, cancelled 45: licenses issued 75, renewed 44: letters received 1778, written 1802. H. E. Sheppard, Mining Recorder, remarks that the most active area was the Matachewan gold field comprising the townships of Powell, Baden, Cairo and Alma. A good deal of development went on in this field until the freeze-up, and he understood, with very satisfactory results.

Porcupine.—Claims recorded 48, cancelled 37: licenses issued 54, renewed 46: letters received 1449, written 1353.

Parry Sound.—Claims recorded 12, cancelled 1: licenses issued 13, renewed 24.

Kowkash.—Claims recorded 2, cancelled 0: licenses issued 58, renewed 2: letters received 477, written 401.

Mining Companies

In 1918 there were 59 mining companies incorporated under the laws of Ontario with an authorized capital of $49,809,000: seven extra-Provincial mining corporations were licensed to do business here and employ an aggregate capital of $15,000,000. Four mining companies surrendered their charters. The list of incorporations is unusually short, the number in 1917 being 100 and the nominal capital $117,183,000.

MINING COMPANIES INCORPORATED IN 1918.

Name of Company.	Head Office.	Date of Incorporation	Capital.
			$
Acme Engineering Company, Limited	Toronto	Jan. 30	125,000
Aetna Gold Mines Limited	"	Mar. 8	1,000,000
Allied Gold Mines, Limited	"	Nov. 23	2,000,000
Alloy Steel Works, Limited	"	Oct. 17	1,500,000
Attic Lake Mines, Limited	"	Aug. 19	40,000
Auto Oil Company, Limited	"	Feb. 22	250,000
Belle River Oil Company, Limited	Walkerville	May 20	40,000
Bothwell Oil Company, Limited	Toronto	Nov. 22	400,000
British American Feldspar, Limited	"	Oct. 1	100,000
Burlington Steel Company, Limited	Hamilton	Dec. 16	1 000,000
Cadwell Brick Company, Limited	Windsor	Feb. 7	200,000
Canadian Fluorite, Limited	Toronto	Apr. 2	500,000
Canadian Industrial Minerals, Limited	"	Feb. 14	500,000
Castle Oil & Gas Company, Limited	"	Aug. 19	1,500,000
Churchill Mining & Milling Co., Ltd.	"	Mar. 22	1,000,000
Cobalt Smelting & Mining Co., Ltd.	"	Jan. 17	40,000
Colorado-Ontario Development Co., Ltd.	"	Apr. 12	40,000
Contact Bay Mines, Limited	"	July 10	200,000
Detroit-Glencoe Oil Company, Limited	Glencoe	May 18	650,000
Dominion Mineral Resources, Limited	Toronto	Apr. 3	40,000
Dover Oil Company, Limited	"	July 22	1,000,000
Dundas Oil & Gas Company, Limited	"	Sept. 11	500,000
Edwards & Wright, Limited	"	Jan. 30	100,000
Eldorado Mining & Milling Company, Ltd.	"	Aug. 14	500,000
Galt Foundry Company, Limited	Galt	Feb. 13	40,000
General Research & Development Co., Ltd.	Toronto	July 27	100,000
Goderich Salt Company, Limited	Goderich	Dec. 6	100,000
Golden Gate Mining Company, Limited	Toronto	Jan. 4	40,000
Gold Lake Mining Company, Limited	"	Sept. 10	1,000,000
Great Lakes Oil Refining Co., Ltd.	"	Mar. 14	1,750,000
Harmak Mining Company, Limited	"	June 15	300,000
Hastings Land Company, Limited	"	May 17	40,000
Hattie Gold Mines, Limited	"	Apr. 24	2,000,000
Henderson Farmers' Lime, Limited	"	Feb. 19	40,000
Henderson Mines, Limited	"	Nov. 21	25,000
Hill Gold Mining Company, Limited	"	May 13	3,000,000
Indian Peninsula Mining Company, Ltd.	Cobalt	Apr. 25	1,000,000
John Price, Limited	Toronto	Mar. 9	200,000
Kirkland-Munroe Gold Mines, Limited	"	May 14	2,000,000
Kowkash Gold Mines, Limited	"	Dec. 5	2,000,000
London Oil Company, Limited	London	Aug. 6	40,000
Lookout Mines, Limited	Toronto	May 6	40,000
Matachewan Gold Mines, Limited	"	Oct. 17	4,000,000
Metals Chemical Development Co., Ltd.	Welland	Feb. 8	40,000
Metals Chemical, Limited	"	Jan. 3	1,000,000
Molybdenum Alloys, Limited	Toronto	Jan. 7	500,000
Molybdenum Products Co., Ltd.	Wilberforce	July 12	1,075,000
Montreal-Kirkland Gold Mines, Ltd.	Kirkland Lake	Mar. 2	1,000 000
National Iron Corporation, Ltd.	Toronto	Apr. 27	3,000,000
National Peat, Limited	"	Apr. 20	100,000
Nepigon Reserve Iron Co., Ltd.	"	Feb. 21	375,000
Northern Gas & Gasoline Co., Ltd.	Hepworth	Jan. 22	60,000
Ontario Peat Products, Limited	Chatham	Oct. 29	40,000
Parry Sound Iron Company, Limited	Owen Sound	July 30	2,000,000
San Patricio Mining & Milling Co., Ltd.	Toronto	Nov. 7	1,500,000
Stanton Oil Producing Company, Ltd.	"	Oct. 28	300,000
Sudbury Diamond Drilling Co., Ltd.	Sudbury	June 25	100,000
Superior Mines, Limited	Toronto	June 10	500,000
The Algoma Pyrites Company, Ltd.	Sault Ste. Marie	Oct. 10	1,500,000
The Bancroft Marble Quarries, Ltd.	Toronto	Aug. 7	300,000
The Buckingham Mines, Limited	"	Mar. 26	1,000,000

MINING COMPANIES INCORPORATED IN 1918.—*Continued.*

Name of Company.	Head Office.	Date of Incorporation.	Capital.
The Donnen Feldspar Co., Ltd.	Ottawa	Apr. 10	100,000
The Excelsior Gas & Oil Co., Ltd.	Hamilton	Sept. 24	40,000
The Mica-Products, Limited	Toronto	May 28	40,000
The New Extension Mines, Limited	"	Oct. 23	150,000
The Petrolia Oil and Refining Co., Ltd.	Petrolia	Nov. 27	40,000
Universal Coal Company, Limited	Toronto	Apr. 2	100,000
Victory Gold Mines, Limited	"	Jan. 12	1,000,000
Victory Oil & Gas Company, Ltd.	"	Nov. 20	1,000,000
Vindicator Gold Mines, Limited	"	Feb. 8	1,000,000
Western Ontario Oil Company, Limited	"	Sept. 28	1,000,000

MINING COMPANIES LICENSED IN 1918.

Name of Company.	Head Office for Ontario.	Date of License.	Capital for use in Ontario.
Canadian National Carbon Company, Ltd.	Toronto	Mar. 15	$1,200,000
Dillon Crucible Alloys, Limited	Welland	June 4	110,000
Falconbridge Mines, Limited	Sudbury	Sept. 12	10,000
General Mining & Exploration Co., Ltd.	Toronto	Jan. 17	40,000
M. J. O'Brien, Limited	Ottawa	Jan. 17	12,000,000
The A. A. Robins Mining Co.,	Toronto	Apr. 4	40,000
The Shale Brick Co., of Canada, Ltd.	"	Sept. 20	1,600,000

MINING COMPANY CHARTERS SURRENDERED IN 1918.

Name of Company.	Date of Dissolution.
New Extension Mines, Limited	Dec. 30
New York & Ontario Oil & Gas Co., Ltd.	June 24
The Crown Gypsum Company, Ltd.	Sept. 16
The Holmes Gas Company, Limited	Oct. 7

Mining Revenue

Mining revenue is derived mainly from three sources, (1) Crown lands, (2) fees for miner's licenses, etc., (3) taxation. Large sums were in former years received from royalties reserved to the Crown on the proceeds of minerals obtained from particular parcels of land or under agreement with certain purchasers, but in most cases the mines have been exhausted, and the payments have ceased.

From Crown lands the receipts comprise moneys paid for purchases or leases of mining lands, the price being fixed by statute or regulation, or as royalties on sand and gravel removed from the beds of lakes or rivers owned by the Crown, chiefly the great lakes and connecting streams.

The schedule attached to the Mining Act provides for certain fees, such as those for miner's licenses, forest reserve permits, recording claims, etc. A large part of this source of revenue comes to the Department through the offices of the Mining Re-

corders, and rises or falls according to the activity of prospecting and speculation in mining claims.

Under the Mining Tax Act, an impost of 3 per cent. is levied on the annual net profits of mining companies in excess of $10,000. If such profits exceed a million dollars the rate rises to 5 per cent. on the excess. In the case of nickel-copper companies the rate is graded from 5 per cent. upward, and is based on the selling price of the refined products less the cost of production.

For the fiscal year ending October 31, 1918, the mining revenue was as follows:—

Sales of mining land	$33,535 58
Mining leases	14,009 15
Sand and gravel royalties	29,464 21
Sand and gravel rentals	3,469 66
Miner's Licenses, etc.	52,271 86
Mining Tax Act	919,208 80
Provincial Assay Office	722 35
Provincial mine	1,384 53
Total	$1,054,066 14

Sales and Rentals.—Mining lands are sold at $2.50 per acre if in the unsurveyed territory, the purchaser procuring a survey of the same at his own expense, or at $3 per acre where the lands have been surveyed by the Crown. In the following table are given particulars regarding the mining lands sold and leased during the year. There is some difference between the footings of this table and the figures given above, since the latter comprises all moneys received, while the former represents only completed transactions.

TABLE XVIII.—MINING LANDS SOLD AND LEASED DURING 1917-18.

District.	Sales.			Leases.			Total.		
	No.	Acres.	Amount.	No.	Acres.	Amount.	No.	Acres.	Amount.
			$ c.			$ c.			$ c.
Timiskaming	222	8,138.98	22,012 76	46	1,801.22	1,721 80	268	9,940.20	23,734 56
Thunder Bay	33	1,238.17	3,195 31	....	.....	.....	33	1,238.17	3,195 31
Algoma	2	80.50	241 50	....	.....	.....	2	80.50	241 50
Sudbury	51	2,117.70	5,580 45	26	1,297.81	1,297 81	77	3,415.51	6,878 26
Nipissing	....	.....	.....	1	20.43	20 43	1	20.43	20 43
Kenora	19	550.29	1,150 65	....	.....	.....	19	550.29	1,150 65
Total	327	12,125.64	32,180 67	73	3,119.46	3,040 04	400	15,245 10	35,220 71

Miner's Licenses, etc.—The fee for a miner's license is $5 per annum, and it gives the holder the right to stake out mining claims on Crown lands, to the number of three in any or every Mining Division during the year of its currency. Other fees paid to Mining Recorders are included under this heading, for instance the fee for recording a claim $10, etc.

Sand and Gravel Royalties.—Annual licenses to dredge for sand and gravel mainly in the beds of the great lakes and the rivers connecting them are issued under the Public Lands Act. The fee for a license is $100, and a royalty varying from three to 12 cents per cubic yard is levied on the quantity of material removed.

Mining Tax Act.—Revenue under this Act classifies itself under three headings, as follows:—

Acreage tax	$29,301 62
Profit tax	863,547 75
Natural gas tax	26,359 43
Total	$919,208 80

The acreage tax is at the rate of five cents per acre and now applies to all mining lands, instead of those only in unorganized territory, as was the case until 1917. Mineral rights severed from the surface are also liable to the tax.

The statement given below shows the sums paid as profit tax by the mining companies in 1917-1918, classified according to the minerals worked:—

Gold:		
Hollinger Consolidated, Ltd.	$70,473 07	
Tough-Oakes	6,472 97	
Porcupine Crown	1,697 80	
McIntyre-Porcupine	8,937 03	
		$87,580 87
Silver:		
Aladdin	$65 89	
Buffalo	1,001 34	
Penn-Canadian	37 43	
Trethewey	1,090 03	
McKinley-Darragh-Savage	3,265 29	
Kerr Lake	34,460 16	
Crown Reserve	1,150 42	
Temiskaming	6,661 71	
Coniagas	6,505 55	
Nipissing	64,927 56	
Mining Corporation of Canada	872 44	
Beaver Consolidated	895 96	
Miller-Lake O'Brien	8,781 77	
		129,715 55
Graphite:		
Black Donald		356 78
Mica:		
Loughborough Mining Company		125 43
Nickel-Copper:		
International Nickel Company	$600,000 00	
Mond Nickel Company	45,769 12	
		645,769 12
Total		$863,547 75

The collection of the revenue arising under the Mining Tax Act is under the charge of G. R. Mickle, Mine Assessor, who remarks as follows:—

The profit tax is levied on the profits in excess of $10,000, and is determined in the manner explained minutely in the Act. The rate of taxation in all cases except for nickel mines is 3 per cent., with provision for a levy of 5 per cent. on profits exceeding $1,000,000. There is, moreover, a deduction for municipal income tax paid the municipalities in which the various mines may be situated, amounting to one and a half per cent. of the taxable profits, with a certain maximum. With nickel mines the minimum rate is 5 per cent., with an increasing percentage on a sliding scale for profits over $5,000,000.

The revenue called profit tax is obtained from four different kinds of mines, namely, (1) gold, (2) silver, (3) nickel-copper, (4) all other kinds or miscellaneous. The relative proportions of the total tax accruing due from these four kinds were approximately:—

(1) From gold mines	3	per cent.
(2) From silver mines	16	"
(3) From nickel-copper mines	80	"
(4) From miscellaneous mines	0.5	"

The amount obtained from silver mines was more than that collected during the previous year, due to an average increase in the price of silver of nearly seventeen cents per ounce in 1917 over 1916, the tax being calculated in every case on the operations of the preceding year.

Gold mines on the other hand show a serious decrease in profits in the same period. The increased operating costs with no compensating increase in the price obtained for gold had a tendency to curtail operations in addition to reducing profits on the gold actually extracted.

For the immediate future the most serious change will be a decided drop in the revenue obtained from nickel mines due to decreased output and lower price prevailing for copper.

The natural gas tax is levied as a uniform rate per thousand cubic feet, and about 80 per cent. of the natural gas produced in Ontario in the last few years has been drawn from the Kent gas field. The output having been restricted, as a measure of conservation, while the production from the other fields has remained stationary, there will be a marked decline in revenue from this source unless new discoveries are made.

The sum collected as acreage tax is slightly below the amount that may be expected annually from this source.

Provincial Assay Office

W. K. O'Neill, Provincial Assayer, reports as follows for the year 1918:—

During the year 1918 the work of the Provincial Assay Office was greater in volume and more diversified in character than in former years, because of the increased demand for non-metallic minerals, and the Assay Office has been called upon by a number of those engaged in the mining industry to assist in solving the problems with which they were confronted.

In general the scope of the work may be described as follows:—

1. Examination and assaying of samples for prospectors, mining engineers, geologists, and the public generally. For this work the Department charges the regular fee.

2. Analyses of samples of rock, etc., for the geologists of the Bureau of Mines.

3. The sampling of car lots of Cobalt silver ores shipped from the mines, upon which the government collects a royalty. This work is in charge of Mr. T. E. Rothwell, Assistant Assayer.

4. The assaying and valuation of these car lots.

5. Special research work.

In addition to the above programme of activities, I had charge of the mineral exhibit made by the Bureau at the Canadian National Exhibition, Toronto, and also the display of Ontario minerals and metallurgical products at the National Exposition of Chemical Industries held in New York, and I wish to thank those who loaned samples for exhibition purposes, and in other ways helped to make this department a success.

The following list will show the work done in the laboratory:—

Gold ores:—521 samples were assayed for gold and reports issued.

Silver ores:—77 samples of silver were assayed. Car lots are reckoned as one sample.

Platinum minerals:—A greater activity was noticed in connection with platinum assaying, and altogether 22 samples were assayed and reports issued.

Copper ore:—24 samples were analyzed.

Nickel and Cobalt ores:—18 samples of nickel and 13 samples of cobalt were submitted for analysis.

Iron ores:—71 samples of iron ore were submitted. These in many cases were assayed for silica, sulphur and phosphorus as well as titanium and vanadium.

Chrome ores:—10 samples of chrome ore were analyzed for chromium.

Zinc and Lead ores:—8 samples were assayed for their zinc and lead content.

Feldspar:—9 samples of feldspar were assayed for potash and soda; in some cases a complete analysis was made.

Sands:—Complete analyses were made of 8 samples of sand, submitted by the geologists of the Bureau of Mines.

Rocks:—36 samples were analyzed for the geologists of the Bureau of Mines.

Radium:—8 samples were submitted by mail for the radium test; also a number were brought in directly to the laboratory. No charge is made for this work.

Identification:—77 samples were sent by mail for identification. Some hundreds of samples were brought directly to the office and identified. No record was kept of these, and no charge is made for this class of work.

Miscellaneous:—63 other samples were submitted for assay, including barite, limestone, fluorspar, magnesite, etc.

The work of this Department was carried on with the assistance of Mr. T. E. Rothwell, Assistant Assayer, as well as Mr. A. T. Leat, who is employed as a sampler and general assistant.

Samples will be dealt with in the order of their arrival. In every instance specimens and samples should be accompanied by statement specifying the precise locality whence they were taken.

Crushed samples representing large quantities or samples less than five pounds weight may be sent by mail as third class matter. The name and address of sender should be written plainly on each parcel. Instructions, with money in payment of fees, should be contained in a separate letter. Samples may be sent by express, charges prepaid.

Sample bags addressed to this Laboratory for sending ore pulp by mail may be obtained free on application; also canvas bags for shipping.

Money in payment of fees, sent in by registered letter, post-office order, postal note, or express order, and made payable to the Provincial Assayer, must invariably accompany sample to insure prompt return of certificate, as no examination is commenced until the regulation fee is paid.

Samples should be addressed as follows: Provincial Assay Office, 5 Queen's Park, Toronto, Ont.

Tariff of Fees for Analyses and Assays.

1. Assays:

Gold	$1 50
Silver	1 50
Gold and Silver in one sample	2 50
Platinum Minerals	5 00
Gold and Platinum Minerals in one sample	7 00
Separation of Platinum Minerals	Prices on application

2. Iron Ores:

Iron (metallic)	$1 50
Silica	1 50
Iron and insoluble residue	2 50
Ferrous Oxide	2 00
Phosphorus	3 00
Sulphur	2 50
Iron, Sulphur, Phosphorus and insoluble	8 00
Manganese	3 00
Titanium	4 00
Complete analysis	Price on application.

3. Limestones, Dolomites, Marls, Clays, Shales:

Determination of:

Insolubles	$1 50
Silica	1 50
Ferric Iron	3 00
Ferrous Iron	2 00
Alumina	3 00
Lime	2 00
Magnesia	2 50
Potash	5 00
Soda	5 00
Alkalies (on one sample)	6 00
Water (combined)	2 00
Moisture	1 00
Carbon Dioxide	2 00
Sulphur	2 50
Phosphorus Anhydride	3 00

4. Examination of Clay, Shale, or Cement Rock for Cement Manufacture:

Determination of:

Silica, Iron Oxide, Alumina, Lime, Magnesia, Sulphur, and Volatile matter ..... Prices on application.

5. Coal, Coke, Peat, etc.:
Determination of:

Moisture	$1 00
Volatile Combustible	1 50
Fixed Carbon	1 50
Ash	1 50
Sulphur	2 50
Phosphorus	3 00
Calorific value (B.T.U.)	5 00
Ultimate analysis	Price on application.

6. Mineral Waters ..... Price on application.

7. Ores and Minerals:
Determination of:

Alumina	$3 00
Antimony	4 00
Arsenic	4 00
Bismuth	4 00
Cadmium	4 00
Chromium	5 00
Cobalt	5 00
Nickel	5 00
Cobalt and Nickel on same sample	6 00
Copper	2 00
Fluorite	4 00
Lead	3 00
Molybdenum	4 00
Manganese	3 00
Tin	4 00
Zinc	3 00

8. Rocks, Complete Analysis ..... Price on application.

9. Slags, Sand, etc. ..... Price on application.

10. Identification of Minerals and Rocks not Requiring Chemical Analysis.. Free.

11. Test for Radio-Activity ..... Free.

Any analytical work not specified in this circular will be undertaken on application to the Provincial Assayer.

The pulp of each sample is retained for future reference.

Minerals new to Ontario

Three minerals not heretofore recognized as occurring in Ontario, have been identified by members of the geological staff of the Bureau of Mines. One of these is elaterite, a species of hydro-carbon found sparingly in a vein of fluorspar near Madoc worked by Canadian Industrial Minerals Limited. It was brought by R. C. Bryden, the company's manager, to the attention of C. W. Knight, Assistant Provincial Geologist. Following is Mr. Knight's description of the mineral:—

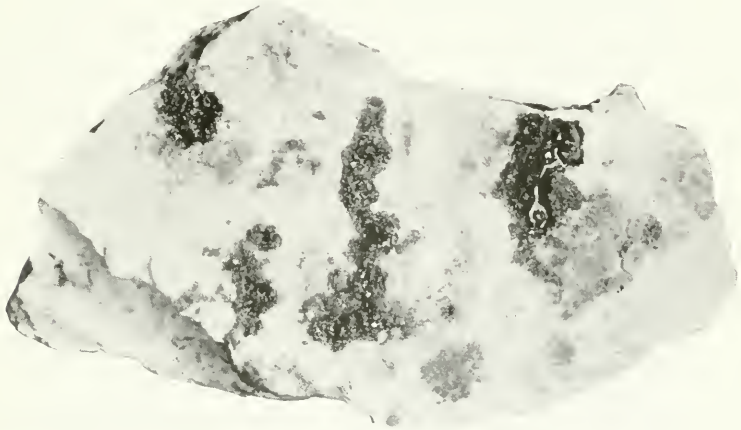
Elaterite or Elastic Bitumen

The attention of the Ontario Bureau of Mines having been called to the occurrence of a peculiar bituminous substance in the fluorite vein of the Canadian Industrial Minerals, Limited, at Madoc, Hastings County, Ontario, the writer spent a short time in the early part of May, 1919, examining the deposit. R. C. Bryden, manager of the company, very kindly took the writer through the mine, and pointed out the location of the material. Specimens were collected and forwarded to Ledoux and Company of New York, and the material was determined to be "elastic bitumen," or

"elaterite." Elaterite has not previously been found in the Province of Ontario, and its occurrence is not mentioned in Johnston's "List of Canadian Mineral Occurrences" published by the Geological Survey of Canada.

The fluorite veins at Madoc have been known for many years. They contain, in addition to fluorite, the minerals barite and calcite. It was only during the Great War that they were worked to any large extent. T. F. Sutherland describes sixteen properties round Madoc in which fluorite is found.[1] The deposits are also described in the Twenty-Second Report of the Ontario Bureau of Mines, Part II.

The veins intersect granites, schists, crystalline limestones and other rocks of pre-Cambrian age, and also fossiliferous limestones of Black River (Paleozoic) age. The deposit owned by the Canadian Industrial Minerals, Limited, occurs in a red and grey granite and has been worked to a depth of 200 feet. The elaterite was found on the 200-foot level, and was seen at the time of examination to occur spar-



The dark parts of the illustration represent "elaterite" or elastic bitumen.

ingly — less than half a pound altogether—for several feet along the vein where the latter is two or three feet wide. It is not found in economic quantities. It has a dark brown color and occurs in vugs in the vein material. In the specimens collected these vugs are from a fraction of an inch to one or two inches in length, and fractions of an inch in width. It was reported by Mr. Bryden that larger masses of the material had been found.

The description of the identification of elaterite by Ledoux and Company is given below:

> After superficial examination of the sample of bituminous substance associated with fluorite, barite, calcite minerals referred to in your favour of May 10th, 1919, especially with regard to the manner in which it melts and burns and the action of organic solvents upon it, we have little hesitation in expressing the opinion that it is elaterite, known also as mineral caoutchouc or elastic bitumen.
>
> Elaterite and similar bitumens are subject to change in composition due, in part, to more or less oxidation. There are a number of closely related compounds which have been given different names by different observers. The original mineral appears to be an unoxygenated hydrocarbon containing 86 per cent. of carbon and 13 to 14 hydrogen.
>
> The only way to positively identify the compound would be by ultimate analysis, but the sample submitted is insufficient for this purpose; at least, it is impossible to separate enough

[1] Ont. Bur. Min., Vol. XXVII, 1918, pp. 136-138.

of the hydrocarbon perfectly free from the associated inorganic minerals to obtain an accurate analysis.[1] We do not believe it is necessary to go to the considerable expense of ultimate analysis for the purpose of classification, since, if the mineral is not elaterite, it is at least something very close to it, and, furthermore, such authorities as there are on these minerals differ as to the composition.

We would also call your attention to the fact that the bitumen in the sample is not uniform, part of it being more or less sticky and fluid, while the rest is of the consistency of crude rubber. This variation in consistency (and also in composition) is noted in Dana's Mineralogy.

It may be added that Mr. Bryden told the writer that he considered the material to be elaterite. This was before the sample was forwarded by the Ontario Bureau of Mines to Ledoux and Company for definite identification

The origin of the elaterite in the fluorite vein is obscure. It may have been deposited at the same time as the fluorite, calcite, and barite which now compose the deposit. If this is true, then possibly the elaterite may have had a volcanic origin.

Fluorite concentrating mill on property of Industrial Minerals, Ltd., Madoc.

since fluorite is often considered to have been deposited from gases and vapours given off by igneous rocks. There are, however, no known igneous rocks cutting the Paleozoic beds between Madoc and Lake Ontario.

Another suggestion as to the origin of the elaterite is that the material descended into the vein from pools of oil which might have been present at some time prior to erosion in the overlying beds of Paleozoic limestones.

Whatever may be the origin of the material it is interesting to speculate as to the possible occurrence of a large vein of the material in the Madoc area, hidden somewhere in a valley or other depression. Southeastern Ontario has produced an amazing variety of minerals, some of them in paying quantities, such as talc, fluorspar, feldspar, graphite, mica, iron pyrites and other minerals. Perhaps the region has in store another surprise in the form of workable deposits of elaterite, or some other closely related hydrocarbon.

It is worth while recalling in this connection the deposit of the hydrocarbon known as albertite, which was found in New Brunswick many years ago. The occur-

[1] See so-called anthraxolite and other carbonaceous minerals occurring in Ontario described in Ont. Bur. Mines, Vol. VI, 1896, p. 162.

rence is described by Frederick G. Clapp in a publication (No. 291, Vol. 2, page 59) of the Department of Mines, Ottawa, as follows:

In 1849 Dr. A. Gesner discovered on Frederick brook near the present site of the Albert mines, a vein or bed of a bright, jet-black, shiny material, afterwards identified as mineral pitch or bitumen, and called albertite. This mineral proved on investigation to be of great value and was mined for nearly thirty years at great profit. The records of production were destroyed, but it was known that in each of the years 1865 and 1866 the output of albertite was 20,500 tons, while the total from 1863 to 1874 amounted to 154,800 tons, and during the entire period of working it was probably not far from 230,000 tons. The price ranged from $15 to $20 per ton.

Albertite is a solid bitumen representing the residuum of petroliferous seepages. It occurs in veins in the Albert shales at several points in Albert and Westmoreland counties. While in itself an indication of petroleum in past times rather than at present, it is generally associated with petroliferous shales, and in the Albert mine liquid petroleum was actually collected in buckets from seepages from sandy beds included in the shales associated with the albertite. Albertite is not a coal, notwithstanding the opinions of certain interested parties or legal decisions, but is a petroliferous residuum and therefore to be classed among the indications of oil, at least to the extent indicated above.

Kalgoorlite; Coloradoite

In studying the geological relationships and petrography of the gold mines at Kirkland Lake, particularly the Tough-Oakes mine, A. G. Burrows, Assistant Provincial geologist, recognized in samples of ore given him by C. A. O'Connell, manager of the mine, two tellurides hitherto unknown to Ontario mineralogy. Mr. Burrows thus describes them:

The Ontario Bureau of Mines has added to its equipment at the Provincial Assay Office a grinding and polishing machine and microscope for examining metallic minerals by reflected light. By means of this equipment, aided by qualitative and quantitative analyses, some minerals have been recognized in ore from the Tough-Oakes mines not hitherto known to occur there or, in fact, in Canada.

Some time ago rich specimens of gold ore from the Tough-Oakes mine were obtained from Mr. C. A. O'Connell. These showed native gold, calaverite, altaite, and some black metallic minerals. These latter minerals were determined to be a telluride of gold, silver and mercury, and telluride of mercury, homogeneous minerals under the microscope. The former telluride was analyzed by W. K. McNeill and found to contain 20.40 per cent. au., 31.1 per cent. ag. and 1.02 per cent. hg., which corresponds closely to the formula for kalgoorlite, a precious telluride, first recognized in gold ore at Kalgoorlie in West Australia. The mercury telluride gave strong reactions for mercury and tellurium, but contains no gold or silver, and is the mineral "coloradoite." The presence of this group of tellurides associated with gold is of scientific interest in relation to the genesis of the ore deposit, temperature and pressure of formation of deposit, etc.

While the precious tellurides are probably rare in Kirkland lake ore, there is always the possibility of obtaining them in rich bunches in the veins. The precious tellurides in the material examined are in appreciable quantities. Tellurides of gold, without preliminary roasting, would pass into the tailing in the ordinary cyanide treatment.

Tellurides occur over considerable area along the line of the T. & N. O. railway, there having been recognized, in addition to those mentioned above—tetradymite (bismuth telluride) in Beatty township, calaverite and tetradymite at Boston Creek, petzite in Maisonville and Benoit townships, and hessite in Deloro township.

A New Discovery of Pitchblende[1]

The European supply of radium is in the main obtained from pitchblende. The following note by C. W. Knight on a discovery of this mineral in Nipissing district will therefore be of interest:—

It having been reported to the Ontario Bureau of Mines that pitchblende, extraordinarily rich in radium, had been discovered in Butt township, east of the Georgian Bay, in the Province of Ontario, the writer was instructed to visit the area and make a preliminary examination. Accordingly, two days early in October, 1919, were spent in this township, and one or two ounces of pitchblende were collected.

The mineral was identified and found to be pitchblende by W. K. McNeill, Provincial Assayer for the Province of Ontario. He also found that it was strongly radio-active.

Butt township is entered by way of Kearney, a town on the Grand Trunk railway, 167 miles by rail north of Toronto, and 6 miles east of Scotia Junction. The deposit of pitchblende is 22 miles north-eastward from Kearney. A wagon road leads to within 4 miles of the occurrence, and the last 4 miles must be travelled on foot. It may be added that teams, wagons and supplies are obtainable at Kearney for those who desire to visit the area. Hotel accommodation is available at Scotia Junction and Kearney.

The country along the wagon road into the deposit is for the most part rugged, particularly in Butt township. The hills rise two or three hundred feet or more above the valleys, the latter being filled with sand and gravel. In that part of the township in which the pitchblende occurs the rocks are largely covered with drift, making prospecting difficult. Mica has been mined in a small way in this part of the country, on and off, for years.

The pitchblende occurs sparingly in a coarse, granite pegmatite dike, striking north 25 degrees east, and dipping at about 60 degrees to the northwest. The dike has been worked by an open cut about 40 feet long, and 7 or 8 feet deep. It occurs at the edge of a small lake, locally known as Mica lake, on lot 13 in the sixth and seventh concessions of Butt township. The lake has been partly drained in order to prevent the pit being flooded during mining operations.

The width of the dike is not known, since only the footwall has been exposed by the pit, but it appears to be at least 3 or 4 feet wide. The length of the dike is also not known, the surface being covered with drift: the open cut shows it to have a length of at least 40 feet.

The dike consists of white feldspar, red feldspar, white quartz, smoky quartz, white mica, black mica, a little tourmaline, pitchblende, and other minerals in small quantity, which have not as yet been identified, but which are being investigated by the Ontario Bureau of Mines.

[1] The only regions of the world that have as yet produced any large amounts of radium and uranium on a commercial scale are Colorado and Utah in the United States, and Bohemia in Austria. The principal radium mineral in Colorado and Utah is carnotite, a hydrous potassium uranium vanadate with the composition: $K_2O.2UO_3.V_2O_5(?)H_2O$. In Bohemia the ore is uraninite, a mineral with a somewhat indefinite formula, but essentially a combination of the two uranium oxides UO_2 and UO_3. Pitchblende is the impure, amorphous form of uraninite. Radium occurs in these ores in the proportion of 1 part of radium element to about 3,000,000 parts of uranium. Some radium was extracted from the pitchblende ores of Cornwall, according to the *Mineral Industry*, one mine alone producing 18,000 mg. of radium bromide in 4 years.—R. A. F. Penrose, Jr., 14 Report, N.Y. State Museum, 1917.

The pitchblende appears to be associated with the red feldspar, in which respect it resembles the occurrence of euxenite, a radium-bearing mineral, in Lanark county, Ontario, described in the 26th Annual Report of the Bureau of Mines, 1917. The euxenite of Lanark county also occurs in a coarse granite pegmatite dike.

Little need be said concerning the general geology of this part of the Province of Ontario. The country rock is pre-Cambrian in age, and consists of banded gneisses, such as granite gneiss, mica gneiss, quartzite gneiss, etc., etc. These banded gneisses cover a great area, extending as they do from the Georgian Bay eastward to the Province of Quebec, and from about Lake Timagami southward almost to Lake Simcoe, a distance of some 150 miles. The gneisses are everywhere cut by numberless dikes of granite pegmatite. It is in one of these dikes that the pitchblende in Butt township and the euxenite in Lanark county occur. The number of coarse granite pegmatites is so great in the Province of Ontario as to encourage the hope that pitchblende or some other radium-bearing mineral may be found in large quantities.

The pitchblende in Butt township was discovered by Wm. Elliott, who has worked the deposit for mica from time to time during the past three years. About a ton of mica has been mined and shipped. Mr. Elliott noted the presence of a black, heavy mineral, which he eventually forwarded to Ledoux & Company, of New York City, who gave him the following report, sample No. 1 being the mineral itself, and sample No. 2 the feldspar in which it occurs:—

No. 1.—Uranium	63.60	per cent.
equivalent to		
Uranium Oxide (U_3O_8)	74.98	"
No. 2.—Uranium	0.35	"
equivalent to		
Uranium Oxide (U_3O_8)	0.42	"

Sample No. 1 appears to be pitchblende; it contains approximately 10 per cent. of lead. The radio-activity as determined by the electroscope is very high. Calculated at the usual uranium ratio, the sample contains radium in the proportion of about 190 milligrams per ton. It is impossible to even approximate the value of such extraordinarily rich ore, since there are no established quotations. We think you would be safe in taking $3.00 per pound for the uranium oxide contained as a minimum which would give a value of about $4,500 per ton of 2,000 pounds.

Sample No. 2 is too low grade to be of any commercial value.

The pitchblende in the township of Butt occurs in grains about the size of peas or larger. Mr. Elliott reports that he has found the mineral occurring in masses as large as an egg.

This is the second occurrence of radium-bearing material in Ontario reported since the Legislature in 1914 offered a reward of $25,000 to the first discoverer of ores or substances containing radium in sufficient quantity for commercial extraction. The reward has been claimed in respect of both discoveries, but so far the conditions have not been met, in that radium has not been shown to be present in commercial quantity.

MINING ACCIDENTS IN 1918

Chief Inspector of Mines, T. F. Sutherland, Toronto; Inspectors, E. A. Collins, Cobalt; J. H. Stovel, Sudbury; A. R. Webster, Toronto

During the year 1918 at the mines, metallurgical works, quarries, clay and gravel pits regulated by the Mining Act of Ontario there were 27 fatal accidents causing the death of 32 men, as compared with 36 deaths in 1917. Of these, 10 accidents resulting in 11 deaths occurred underground. Four men were killed above ground at the mines, 12 at the metallurgical works and five at the quarries.

Seventeen companies had fatal accidents during the year.

Table of Fatalities

	1914	1915	1916	1917	1918
Mines, underground	29	17	30	19	11
Mines, surface	9	4	7	7	4
Metallurgical works	5	1	8	6	12
Quarries	15	0	6	4	5
Totals	58	22	51	36	32

The fatalities at the mines were divided amongst the several areas as follows:

	1914	1915	1916	1917	1918
Gold mines	12	3	14	8	3
Silver mines	11	6	8	9	0
Nickel-copper mines	9	11	13	9	7
Iron mines	4	0	2	0	2
Western Ontario	1	0	0	0	1
Eastern Ontario	1	1	0	0	2
Totals	38	21	37	26	15

By months, the fatalities occurred as follows:—

	1914	1915	1916	1917	1918
January	6	0	7	8	3
February	5	3	4	3	5
March	7	0	1	2	4
April	7	4	2	3	3
May	5	0	7	2	2
June	8	1	5	0	1
July	4	2	1	5	1
August	5	3	2	6	2
September	2	3	3	1	2
October	3	3	1	3	4
November	4	1	10	0	5
December	2	2	8	3	0
Totals	58	22	51	36	32

Analysis of Fatalities at Mines

	1914	1915	1916	1917	1918
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Falls of ground	7.9	4.8	24.3	15.4	20.0
Shaft accidents	26.3	23.8	27.0	15.4	0.0
Explosives	26.3	33.3	21.6	15.4	40.0
Miscellaneous underground.	15.8	23.8	8.1	26.9	26.6
Surface	23.7	14.3	18.9	26.9	13.3

Table of Fatal Accidents in Mines, Metallurgical Works and Quarries, 1901 to 1918

—	Persons killed at metallurgical works and mines.	Persons employed at metallurgical works and producing mines.	Persons employed at non-producing mines (estimated).	Total persons employed.	Fatal accidents per 1000 employed.
1901.....	13	4,135	550	4,685	2.77
1902.....	10	4,426	450	4,876	2.05
1903.....	7	3,499	400	3,899	1.79
1904.....	7	3,475	400	3,875	1.80
1005.....	9	4,415	500	4,915	1.83
1906.....	11	5,017	750	5,767	1.90
1907.....	22	6,305	1,140	7,445	2.93
1908.....	47	7,435	1,750	9,185	5.11
1909.....	49	8,505	2,000	10,505	4.66
1910.....	48	10,862	2,000	12,862	3.73
1911.....	49	12,543	2,000	14,543	3.37
1912.....	43	13,108	2,000	15,108	2.84
1913.....	64	14,293	2,000	16,293	3.93
1914.....	58	14,361	1,500	15,861	3.60
1915.....	22	13,114	1,500	14,614	1.51
1916.....	51	14,624	2,000	16,624	3.07
1917.....	36	16,791	1,000	17,791	2.02
1918.....	32	14,726	500	15,226	2.10
Total.....	578	171,634	22,440	194,074	2.98

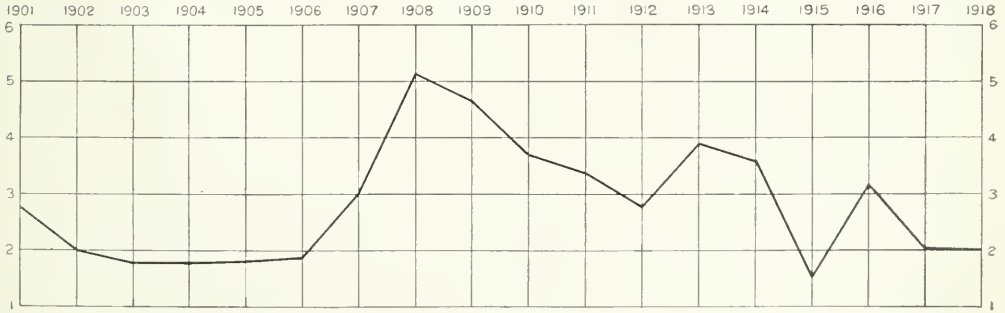


Diagram showing Mining Fatalities per thousand men employed between the years 1901-18.

Table of Fatal Accidents in

No.	Date 1918	Name of Mine.	Name of Owner.	Name of Deceased.	Occupation of Deceased.
1	Feb. 14	Magpie	Algoma Steel Corp'n...	G. Delzotti.....	Machine-runner
2	Mar. 26	Hollinger	Hollinger Consolidated Gold Mines, Ltd. ...	A. Mustafa	Trammer.....
3	Mar. 27	do	do do ..	J. Alta	Machine-runner
4	Feb. 7	Crean Hill	International Nickel Co. of Canada	M. Yogodo	Trammer.....
6	April 25	Creighton	do do	W. Hodorobar ..	Blaster.....
5	May 2	Crean Hill	do do	P. Silbojoun	Trammer.....
7	Aug. 3	Creighton	do do	A. Yurdicki	Blaster.....
7	do	do	do do	J. Rakaunen ...	Blaster.....
8	Oct. 30		do do	W. McClean	Machine-runner
9	Jan. 17	Garson	Mond Nickel Co.	J. Drogowski ...	Scaler.....
10	Feb. 3	Moose Mountain.	Moose Mountain, Ltd..	L. Meliar	Labourer.....
11	Jan. 26	Northern Pyrites	Nichols Chemical Co., Ltd.	A. Salo	Machine-runner
12	Mar. 13	Porcupine Crown	Porcupine Crown Mines Ltd.	E. Komula	Machine-runner
13	April 22	Mt. St. Patrick....	Renfrew Molybdenum Mines, Ltd.	J. Cloutier	Lineman.....
14	May 16	Prospect	Tory Hill Marble & Mica Company	R. S. Hunt	Prospector....

or about the Mines, 1918.

Nationality of Deceased.	Age.	Married or single	Below ground	Above ground	Cause of Accident.
Italian	32	M	1	.....	Crushed by rock while scaling in drift.
Greek	24	S	1	.....	Picked into explosives while loading car.
Finn	19	S	1	.....	Caught by fall of rock in stope.
Russian	27	M	1	.....	Struck by rock from chute.
Roumanian	23	S	1	.....	Caught by run of ore in chute.
Austrian	33	M	1	.....	Fell down ore pass.
German	28	M	1	.....	Premature explosion while blasting.
Austrian	32	M	1	.....	Premature explosion while blasting.
English-speaking	32	M	.....	1	Premature explosion while loading hole.
Austrian	32	M	1	.....	Foot crushed by falling rock. Died Jan. 20.
Galician	45	M	.....	1	Crushed between two cars in briquetting plant.
Finn	24	M	1	.....	Walked into chute blast.
Finn	39	S	1	.....	Buried by run of ore in stope.
English-speaking	26	S	.....	1	Fell from power pole.
English-speaking	31	M	.....	1	Premature explosion while loading hole.

Table of Fatal Accidents at

No.	Date 1918	Name of Works.	Name of Owner.	Name of Deceased.	Occupation of Deceased.
15	April 6	Pig cast house...	Algoma Steel Corp. ...	G. Cavicholo ...	Labourer.....
16	Jan. 22	Smelter	British America Nickel Corporation .	J. Graham	Mechanic.....
17	Feb. 25	Blast furnace ..	Canadian Furnace Co..	C. Dancies	Scrapper.....
18	Mar. 26	Smelter	Coniagas Reduction Co	G. Simionki ...	Labourer.....
19	Feb. 24	do	Deloro Smelting & Refining Co.	H. Thornton ...	Mechanic.....
20	Sept. 12	Refinery	International Nickel Co. of Canada	J. P. Kennedy ..	Crane operator
21	Oct. 25	Slag dump	do do	J. Armtsrong ...	Brakesman....
21	do	do	do do	S. Marco	Truckman....
22	Nov. 16	Smelter	Mond Nickel Co.	P. Mazato	Baleman.....
22	do	do	do do	W. Maluga	Baleman.....
22	do	do	do do	S. Modrok	Labourer.....
22	do	do	do do	A. Zacoruski ..	do .....

Table of Fatal Accidents

23	Nov. 5	Quarry	Canada Crushed Stone Corp.	R. Keival	Driller.....
24	June 26	Crushing plant .	Dominion Mines and Quarries, Ltd.	W. Joseph	Labourer.....
25	Sept. 25	Quarry	do do	J. Jones	Blaster.....
26	July 12	do	National Potash Corp..	C. Price	Driller.....
27	Oct. 18	Yard	Queenston Quarry Co..	T. Bond	Labourer.....

Metallurgical Works, 1918.

Nationality of Deceased.	Age.	Married or Single	Cause of Accident.
Italian	29	S	Burned by molten slag and iron.
English-speaking...	35	S	Fell from staging.
Austrian	53	S	Fell from cast floor to railroad track.
Roumanian	32	M	Scalded in slag pit.
English-speaking..	46	M	Struck by whirling belt.
English-speaking...	28	M	Fell with crane 32 feet.
English-speaking...	33	M	Section of slag dump settled 15 feet.
Austrian	34	M	Section of slag dump settled 15 feet.
Italian	45	S	Crane broke while lifting ladle of matte.
Austrian	32	M	Crane broke while lifting ladle of matte.
Ruthenian	24	S	Crane broke while lifting ladle of matte. Died November 23.
Russian	37	M	Crane broke while lifting ladle of matte. Died November 21.

at Quarries, 1918.

English-speaking..	50	M	Struck by block of wood which fell from tower of drill.
English-speaking..	33	S	Caught between belt and tail pulley of conveyer.
English-speaking..	35	M	Struck by flying rock.
English-speaking..	53	M	Struck by rock rolling down slope.
English-speaking..	38	M	Slab fell while being loaded on railway car.

The occupation and nationality of the men killed are set out in the following table:

Occupation.	English Speaking	Austrian	Finn	Italian	Russian	Roumanian.	Greek	German	Galician	Ruthenian	Total
Machine runner...	3	.....	3	1	.....	.....	.....	.....	.....	.....	7
Labourer	2	.....	.....	1	1	1	.....	.....	1	1	7
Blaster	1	1	.....	.....	.....	1	.....	1	.....	.....	4
Trammer	.....	1	.....	.....	1	.....	1	.....	.....	.....	3
Mechanic	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Baleman	.....	1	.....	1	.....	.....	.....	.....	.....	.....	2
Truckman	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Brakesman	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Crane operator ...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Scrapper	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Lineman	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Sealer.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Prospector	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Total.....	12	6	3	3	2	2	1	1	1	1	32

The ages of the men killed were as follows:

Age	17–20	21–25	26–30	31–35	36–40	41–45	46–50	51–55	Total.
No. killed...	1	4	5	13	3	2	2	2	32

Cause and Place of Fatalities in Mines

Below Ground:—	
Falls of ground	3
Explosive Accidents:—	
Walked into blast	1
Premature explosion while lighting holes	4
Picked into explosive	1
Miscellaneous Accidents:—	
Run of ore in chute	1
Falling down ore pass	1
Buried in stope	1
Ore falling from chute	1
Above Ground:—	
Crushed between two cars	1
Fall from power pole	1
Metallurgical Plants:—	
Burned by molten material	5
Scalded in slag pit	1
Falls	3
Struck by belt	1
Buried in slag dump	2
Quarries:—	
Falling objects	3
Caught in conveyor belt	1
Fall of rock from face	1

Prosecutions

On February 2nd, W. Pohribny, an Austrian trammer, employed at the Northern Pyrites mine, was charged with negligence under subsection 98, section 164, Part IX, of the Mining Act before Magistrate Vaughan of Sioux Lookout, and sentenced to one month in jail with hard labour and fined $25 and costs or an additional month in jail.

Before Magistrate Atkinson, at Timmins, on February 14th, Peter Kulyk, a trammer of the Hollinger Consolidated Gold Mines, Ltd., was charged with an infringement of subsection 97, section 164, Part IX, of the Mining Act, in that he reported for work in an intoxicated condition on February 4th. A fine of $100 and costs was imposed.

John Osmak, an Austrian employee of the Garson mine of the Mond Nickel Company, was sentenced to three months in jail by Magistrate Stoddart of Sudbury, for tampering with the bell signals in the Garson main shaft. See subsection 46, section 164, Part IX, of the Mining Act of Ontario.

B. Longyez, an Austrian cage-tender at the Mond mine of the Mond Nickel Company, was sentenced by Magistrate Stoddart at Sudbury, on May 6th, to three months in jail and a fine of $50 or an additional one month in jail, for negligence in failing to pull the chairs at the 2,300-foot level of the Mond shaft. The information was laid under subsection 5, section 179, Part IX, of the Mining Act of Ontario.

The Gifford Cobalt Silver Mining Company on November 18th were fined $100 and costs by Magistrate Atkinson, at Cobalt, for failure to provide the man-cage on their property with proper safety appliances as required by subsection 31, section 164, Part IX, of the Mining Act of Ontario.

MINES OF ONTARIO

Chief Inspector of Mines, T. F. Sutherland, Toronto; Inspectors, E. A. Collins, Cobalt; J. H. Stovel, Sudbury; A. R. Webster, Toronto.

I.—NORTHWESTERN ONTARIO

Iron Pyrites

Northern Pyrites Mine.—Shipments from this property of the Nichols Chemical Company, Limited, at Northpines, during the season of 1918, amounted to 103,337 tons of pyrites.

Ore is shipped during the navigation season only, and is sent from Northpines by rail to Fort William, thence by boat to the several manufacturing plants of the General Chemical Company in the United States.

Mining operations are continuous throughout the year. In the winter months the excess ore broken in the stopes is stockpiled at the rail-shipping point of the Canadian National railway. All development work, such as shaft-sinking, etc., is also done during the winter while shipments are suspended.

The entire production of 1918 was obtained from the third level east and west stopes and from the fourth level east stopes. Development stopes were continued east and west on the fourth level, new stopes opened and ventilation raises completed. No further shaft-sinking was done during 1918.

J. A. Battle was superintendent during the shipping season, employing from 200 to 250 men.

Mokomon.—The pyrite property of the Nichols Chemical Company, Limited, at Mokomon, in Conmee township, was not operated during 1918. Diamond-drilling was completed in 1917, and it is expected that operations will be commenced during 1920.

Gold

St. Anthony.—After lying idle since the autumn of 1911, the St. Anthony gold mine was unwatered and stoping carried on from May to September, 1918, by the Thunder Mining Company, Limited. The mill was run during part of the summer. The late H. H. Lavery was in charge of the work.

II.—SUDBURY, NORTH SHORE AND MICHIPICOTEN

Michipicoten Area

In this district the Helen iron mine, which for the past fifteen years has been the sole producer of hematite in Ontario, ceased operations in May, with the result that there is not now in Ontario any production of iron ore which does not require beneficiation before smelting.

Development work on the siderite deposit at the Helen mine was stopped in the autumn of 1918 owing to the high cost of labour and supplies, which have now reached a stage at which the siderite ores of this district cannot be mined, hoisted, transported and sold in competition with the natural ores to the south.

The Magpie siderite deposits continued in operation throughout the year.

The Goudreau pyrite mine of the Nichols Chemical Company operated continuously with good results. The Bear deposit was stripped and drilled, as well as one or two other showings owned by this company.

Many gold claims were staked in the vicinity of the Goudreau mine in the spring of 1918, but none of them was largely developed.

Iron

Dreany.—In 1918, some diamond-drilling was done on the Dreany iron claims, situated about four miles north of Goudreau station, Algoma Central Railway.

Helen.—Operations at this mine, owned by the Algoma Steel Corporation, consisted in drawing off the balance of the caved hematite ore, up to April 16th, 1918. At that time all recoverable straight sulphur and merchantable ore had been hoisted. Operations were stopped, the plant was dismantled and closed down permanently.

All ore hoisted was shipped to the Magpie mine, where it is roasted to eliminate the sulphur content. During 1918 4,729 tons of pyrites were shipped from the stockpile to the acid plant at Sault Ste. Marie, and 27,594 tons of hematite were shipped to Magpie mine.

At the large siderite deposit near this mine, which was diamond-drilled in 1916 and 1917, work on the adit, on the north side of the hill, or the deposit which is farthest from the mine buildings, was continued.

This tunnel will tap the ore body about 300 feet below the top of the hill, and a large tonnage will be available above the adit. It is planned to mine this portion of the ore body by open-pit method. Electric haulage to the roast plant, which will be erected not far from the tunnel entrance, will be used. On account of shortage of labour work on all tunnels was stopped on October 4th, 1918. All the equipment was stored with the expectation that work would be resumed early in the spring of 1919. At the time of the shut-down the mine tunnel had been driven 890 feet; No. 1, east branch, 285 feet; No. 2, east branch, 263 feet; and the west branch 244 feet, or a total of 1,690 feet.

G. R. McLaren, Helen Mine, Ont., is superintendent; about 70 men were employed.

Magpie.—The Magpie mine of the Algoma Steel Corporation produced 160,555 tons of roasted ore during 1918, and shipped 168,906 tons. Scarcity of labour prevented the mine being operated to full capacity. The ore produced came from the second, third and fourth level stopes.

A. Hasselbring, general superintendent of mines for the company, was in charge. From 200 to 230 men were employed.

Pyrite

Holdsworth.—A pyrite claim belonging to John Holdsworth and situated half a mile east of Hawk Junction, and about half a mile north of the Michipicoten branch of the Algoma Central railway, was diamond-drilled for the Algoma Steel Corporation. Twenty-two holes were put down. It is understood that over 900,000 tons of pyrite was proven by this work.

Rand.—The Rand Consolidated Mines, Limited, shipped about 3,000 tons of pyrite from their claims a short distance east of Goudreau station on the Algoma Central railway. Two steam shovels were used in stripping. A. W. Jackson, Goudreau, Ont., was in charge. About 20 men were employed.

Nickel and Copper

British-America Nickel Corporation

The development of the Murray mine and the construction work at both mine and smelter were continued in 1918. The furnaces will probably be ready to operate in the autumn of 1919.

The officers of the company are: president, J. H. Dunn, New York; vice-president and managing director, W. A. Carlyle, Ottawa; acting-treasurer, S. H. Brown, Ottawa; head office, Citizen Building, Ottawa.

The authorized capital stock of the corporation is $20,000,000, divided into 200,000 shares of common stock of a par value of $100.

Murray.—The inclined shaft of the Murray mine in April, 1919, was 1,032 feet deep, measured on the slope, and the seventh and eighth-level stations are being cut at 800 and 900 feet respectively. From the shaft, which is sunk at an angle of 36 degrees and is in the footwall, the station cross-cut is driven to the footwall. Drifting is then carried on in ore along the footwall in both directions, and chutes are put in at 35-foot intervals. Untimbered raises 20 feet by 10 feet have been completed between the fourth and third levels, the third and second levels, and from the second level to the workings of the old mine. Between the sixth and fourth levels raising is in progress. About 350 feet of drifting has been done on each of the first six levels. Ore hoisted during 1918 amounted to 21,000 tons.

The shaft house and rock house are being built, and the brick power house, smokestack, and the blacksmith and machine shop building are completed. Three 500-h.p. Babcock and Wilcox boilers have been set up, as has the primary crusher, which is 36 in. by 48 in. and is of the Buchanan jaw type.

The new steam hoisting engine is now in position. This was made by the Canadian Allis-Chalmers Company, and is a duplex, direct-acting, double-drum Corliss, designed for 160-lbs. steam pressure. The cylinders are 22-inch by 48-inch. The drums are 7 ft. in diameter and 5 ft. 6 in. face between flanges, with grooves for 2,180 feet of 1¼-inch rope in two layers. One drum is keyed to the shaft and the other is loose, being driven by means of a double-disc, multiple-arm, friction clutch. The brake is of a parallel motion post type, with a brake wheel 101 in. in diameter and 13 in. face. An overwinding device entirely closes the throttle in case of an overwind, and applies the brake. This device also makes it necessary to reverse the engine after each trip before the throttle valve can be reopened. By means of a Reeves variable-speed changing device, the speed of the engine can be varied from that required for hoisting ore to that for hoisting men, while the speed of the governor remains practically constant. Hoisting will normally be in balance, but the engines are large enough to handle the total load out of balance in case of emergency. The maximum load on one rope will be 19,550 lbs. effective rope pull, and with balanced hoisting 12,450 lbs. effective rope pull.

International Nickel Company of Canada, Limited—General view of the Port Colborne plant.

Bird's-eye view of the Port Colborne plant from the southwest.

The officers of the company are: mine superintendent, Ernest Hibbert; assistant superintendent, H. L. Roscoe; mine foreman, J. H. Jones. Eighty-eight men were employed at the mine, exclusive of those on construction work.

Smelting Plant.—At the end of April, 1919, the work at the smelter at Nickelton had reached the following stage: office, warehouse, machine and boiler shop, and transformer house were completed and equipped: carpenter shop completed, power house completed and machinery being installed. Four Babcock and Wilcox boilers of 1,000 h.p. each have been set up with superheaters, mechanical stokers and coal-crushing and conveying plant; two more of these boilers are to be added. The steel work and roof of the main smelter building are completed. Two blast furnaces, 30 ft. long by 50 in. wide at the tuyeres are being erected. The main flue is completed and consists of brick and steel on a concrete foundation. The converter flue of similar construction is now being built. The ore bin foundations are being poured, and work has been commenced on the smelter stack, which is to be 25 feet inside diameter and 300 feet high.

The staff consists of: smelter superintendent, R. J. Carlyle: superintendent of construction, J. H. Gillis; electrical engineer, R. Howard; master mechanic, Walter Turner.

International Nickel Company of Canada

The International Nickel Company of Canada, Limited, was incorporated in the Dominion of Canada in July, 1916, with an authorized capital of $5,000,000, which in March, 1918, was increased to $50,000,000. In August, 1918, the Canadian Copper Company was absorbed by the International Nickel Company of Canada, Limited, and is now known as the Mining and Smelting Division of that company, the organization at the Port Colborne refinery being known as the Refining Division. A description of the plant and process will be found in another part of this report under the heading "Refineries." In November, 1918, the International Company opened its head office in the Harbour Commission Building, Toronto.

The officers of the company at Toronto are: President, A. D. Miles; vice-president, J. L. Agnew (Copper Cliff); assistant to president, G. E. Silvester; secretary, Britton Osler: assistant auditor, F. P. Bernhard: assistant treasurer, Wm. Dennett. The Mining and Smelting Division, Copper Cliff, comprises the following: General manager, J. L. Agnew (vice-president); general superintendent, J. C. Nichols; assistant general superintendent, E. H. Jones: superintendent of mines, E. T. Corkill: smelter superintendent, W. Kent; safety engineer, E. A. Collins. The Refining Division at Port Colborne is composed of John More, general manager: Jas. T. Kemp, assistant general manager.

During 1918, the Creighton and Crean Hill mines and the Dill quartz quarry were worked continuously, while the smelter at Copper Cliff was worked at full capacity. The new refinery at Port Colborne, Ont., began operating in June, and turned out the first run of refined nickel on September 15th. Owing to the lack of demand for nickel and copper after the signing of the armistice, production was greatly reduced in the latter part of January, 1919.

Copper Cliff Smelter.—Full production was maintained at the Copper Cliff smelter in 1918, where there are eight blast furnaces and six converters. An additional silica dryer was added in the converter building.

In January, 1919, production was curtailed, three furnaces and three converters being left in operation.

The Garred-Cavers process of firing with powdered coal is being tried in one of the blast furnaces.

Creighton.—The shipments from the Creighton mine during 1918 amounted to 1,104,674 tons of nickel-copper ore. The greater part of this ore came from between the 14th level and the surface. The main shaft, No. 3, was sunk to the 22nd level, a distance of 1,100 feet measured along the slope. Levels 16, 18, and 20 were opened during the year, and on the 20th level a 30-in. by 42-in. Farrell jaw crusher is being placed in position.

On the sixteenth level a new pump is in use. This is a Gould's Pattern L.A., vertical, single-acting, triplex, plunger pump, size 6¼ in. by 16 in. It has a capacity of 235 gallons of cold water per minute under a total head of 1,525 feet, including the fraction head. This pump operates at 38 r.p.m. with an efficiency of 84 per cent. Under the conditions outlined above it requires 108 b.h.p. delivered to the pump shaft. When operating at a reduced head of approximately 1,055 feet, 80 horsepower is required, and the pump has an efficiency of 78 per cent. The gear is 59 1-3-in. outside diameter and 11-in. face. The pump is driven by a 100-h.p. squirrel-cage Canadian Crocker-Wheeler motor, 550-volt, 3-phase, 25-cycle, 500 r.p.m.

G. A. Morrison is superintendent; about 1,100 men were employed during the year.

Crean Hill.—The Crean Hill mine was worked continuously in 1918, but was closed down in January, 1919, and allowed to flood. During 1918, 125,036 tons of ore were shipped, most of which came from above the sixth level.

Charles Collins was superintendent.

Dill Quarry.—The Dill quartz quarry was worked during 1918, but was closed down at the end of January, 1919. The shipments of quartz during 1918 amounted to 96,021 tons.

W. H. Roach was superintendent, employing 45 men.

Mond Nickel Company

The Mond Nickel Company, Limited, employed an average of 1,522 men in its Ontario mines and smelter during 1918. Of this number, 942 were employed on the surface and 580 underground.

The company has a capitalization of £2,400,000 as follows: 500,000 7 per cent. £1 cumulative preference shares; 1,000,000 7 per cent. £1 non-cumulative preference shares; 900,000 ordinary shares, £1 each.

David Owen Evans, 39 Victoria St., London, S.W., is secretary. The head office of the company in Canada is at Coniston. The officials are C. V. Corless, manager, who is also a director of the company; J. F. Robertson, superintendent of

reduction works: O. Hall, mines superintendent; W. L. Dethloff, chief engineer; W. H. Soule, electrical superintendent.

Coniston Smelter.—Two units at the Coniston smelter were in operation until June, 1918, when a fourth furnace and converter were blown in. From June to November three units were in blast, one furnace and one converter being used as standbys. From November until the end of 1918 two furnaces and two converters were operated.

An innovation at this plant is the use of Garr silica guns to insert silica flux into the converters. The quartz does not require to be dried and is forced in by means of compressed air.

Bruce.—The Bruce copper mine at Bruce Mines was worked during all of 1918 by the Mond Nickel Company, and 39,021 tons of siliceous copper ore was shipped to Coniston smelter.

On the 155-foot level of the Tayler shaft, 97 feet of drifting has been done to the west and 860 feet to the east of the shaft. This work has exposed considerable ore, none of which has yet been stoped. Work on this ore body was stopped in July, 1918.

On the 127-foot level of the No. 1 shaft, the drifting done to date (April, 1919) amounts to 1,533 feet to the northwest and 200 feet to the southeast of the shaft. At a point 600 feet northwest of this shaft, a winze has been sunk from the 127-foot to the 527-foot level. On the latter level the drifting consists of 88 feet to the northwest and 166 feet to the southeast.

A. D. Carmichael, Bruce Mines, Ont., is superintendent; 65 men are employed.

Garson.—Shipments from the Garson mine in 1918 amounted to 143,016 tons. Most of the output was obtained from between the fourth and sixth levels. Extensive development work was done on the eighth and tenth levels with gratifying results, as the ore body has proved much larger than on the upper levels. No shaft-sinking was done.

J. R. Thoenen was superintendent until November, when V. P. Row succeeded him.

Levack.—The shaft at the Levack mine is now 700 feet deep (650 feet vertical depth) and the seventh level is being developed. Much development work was done on the fifth level in 1918, most of the ore produced during the year coming from this level and the levels above.

The ore shipped in 1918 amounted to 97,585 tons. The average number of men employed was about 210. F. J. Eager, Levack, Ont., is superintendent.

The following description of the Levack ore body and workings is abstracted from a paper written by O. Hall and read before the Canadian Mining Institute, March 7th, 1919:—

Conditions:—The Levack orebody has a maximum length of 1,200 feet and a thickness of from 20 to 200 feet. The dip varies from 30 to 70 degrees, the footwall being irregular. The walls are of greenstone and gneiss, chiefly the latter. The ore is tough and the walls stand well. As the orebody dips under a muskeg through which flows a creek draining a

large water basin, caving might result in flooding. Ample pillars must, therefore, be left.

Method of Mining:—The method of mining resembles that used at the Alaska Treadwell. The mine is divided into 40-foot pillars and 100-foot rooms. The pillars and rooms are approximately at right angles to the strike. The pillars are rib pillars, continuous on the dip. The rooms are completely mined out, no floors being left. Shrinkage stopes are started above each main level, and are carried through the floor of the level above. Above the 800-foot level where a pinch occurs, the pillars are being left until the remainder of the orebody has been removed. The final removal of these pillars may necessitate partial filling.

Development:—A central five-compartment shaft has been sunk at an angle of 65 degrees in the footwall. Main levels have been driven at vertical intervals of 120 feet. Where the orebody has a low dip, intermediate stations are cut and sub-levels driven 60 feet above the main levels. The main levels are developed by drifting to the ends of the orebody, and cross-cutting to the foot and hanging walls. Two cross-cuts, 50 feet apart, are driven under each stope. Where the dip is less than 60 degrees, the cross-cuts extend about 20 feet into the footwall and the ends of these cross-cuts are then joined by a drift in the footwall. Short raises are run from the sides of the cross-cuts and from the footwall drift. These are spaced at 35-foot centres and are shaped to take chutes of the Creighton type or steel-plated platforms sloping at 10 degrees. The latter are used only where much blockholing or sand-blasting is expected. When these raises are completed, a slice of ore is removed over the whole extent of the stope at a height of 20 feet above the main level. This operation is known as "cutting the section." The mill holes are then funnelled. Ventilation and manways are provided by running raises up the centre of each stope along the footwall and also in alternate pillars. When the dip is less than 50 degrees, short cross-cuts are run 60 feet above the main level from the raises to determine the position of the footwall. A footwall drift is then run from the sub-level station. The stopes can thus be entered from the sub-level, the level above, or through short drifts driven into the pillar raise. Steel and tools may be lowered into the stope through the stope raise, and removed by lowering them through the pillar raise. The direction of the ventilation is up the pillar raise and out by the stope raise. A system of ore pockets has been cut in the shaft pillar.

The footwall drifts facilitate tramming, as empty cars may be handled in one drift and loaded ones in another. Where the latter factor is not important, mill-holes are placed at the footwall end of cross-cuts and the footwall drifts omitted.

Stoping:—The stopes in the wider portion of the orebody have fairly large dimensions, 100 feet from pillar to pillar and up to 200 feet from footwall to hangingwall. All the larger stopes are mined by carrying breasts from foot to hanging. Starting at the footwall raise, a slice is cut out of the roof from pillar to pillar. The machines then face the hangingwall and carry a 10-foot breast towards it, drilling three horizontal rows of holes. The horizontal spacing between holes is about 7 feet, the vertical 3 feet. The breast is usually blasted in three stages, the lowest row of holes being fired first, followed by the second and third. After each stage of blasting, the large pieces are block-holed. The roof often breaks ahead of the holes, producing irregular faces, but an attempt to drill symmetrically always pays. Stoping is continued past the sub-level and through the floor and back of the level above. The stopes farthest from the shaft are mined first.

Victoria.—The Victoria Mine shaft, at Mond, which is now completed to a depth of 3,012 feet, is the deepest shaft in Ontario, and probably in Canada. Stations have been cut at the 17th level, 2,578 feet, and at the 18th level, 3,000 feet. On the former level the western ore body is developed, and a winze sunk in ore for 380 feet below the level at an angle of 67 degrees.

Shipments in 1918 totalled 33,198 tons, the ore being obtained from the 4th level down.

W. J. Mumford, Mond, Ont., is superintendent.

Worthington.—In 1918, the Worthington mine shaft was completed to 750 feet vertical depth. The fourth and fifth levels (at 600 and 750 feet) have been developed, and stoping has been begun above the fourth. Shipments for the year amounted to 69,793 tons, and 220 men were employed. J. G. Harris, Worthington, Ont., is superintendent.

The following description of the mining methods at the Worthington is summarized from a paper presented by O. Hall at the Canadian Mining Institute, March 7th, 1919:—

Conditions:—The orebody has a length of about 700 feet and a thickness of 20 to 60 feet. The dip, which is about 70 at the surface, increases with depth and is nearly vertical at 1,000 feet.

Mining Method:—Shrinkage stoping is used. A pillar near the shaft divides the orebody, the ore east and west of this point being mined in separate stopes. In the upper levels a dike further divides the deposit east of the shaft.

Development:—The shaft has been sunk in the footwall and a pillar 60 feet long left opposite. Down to 750 feet the levels have been cut at approximately 150-foot intervals; below this at 250-foot intervals. The stations have been cut in the shaft pillar and a main drift run east and west to the ends of the orebody. Short mill-holes are driven upward from the cross-cuts, and platforms are built three feet higher than the cars. The chutes are in the centre of the platforms and are covered by three 80-pound rails, 18 inches apart. This arrangement combines the advantages of a blockholing chamber and a chute. Where the orebody is less than 50 feet wide, a main drift is run 15 feet away from the footwall. The mill-holes are driven on either side of this at 35-foot centres. This arrangement is found to be more convenient than the cross-cut system, but cross-cuts are sometimes necessary to determine the position of the walls and to place the mill-holes advantageously. After the mill-holes are driven, a slice of the orebody is removed at a height of 20 feet above the level ("section-cutting"); this work is started at the shaft pillar and thence advances to the ends of the orebody.

Stoping:—The shaft pillar and the dike in the eastern part divide the deposit into three stopes. Raises are driven in the shaft pillar and along the dike. At each end of a stope a cribbed manway is provided. The ventilating current travels up one manway and out by the raise. Stoping starts at the raise, a slice being removed from the foot to the hangingwall, the first round of holes being drilled from a cross-bar in the raise. The drills are then pointed away from the shaft pillar, and a breast is carried to the end of the orebody. Up to 1916, piston drills were used, the earlier types of water drill being too light for this ground. With piston drills the back was carried with a downward slope to permit the use of wet holes. With water drills the back is kept level. The drilling face is about 9 feet high, and in it three horizontal rows of holes are carried. The holes are spaced 3 feet vertically and 6 feet horizontally, and are drilled parallel to the walls. The three rows of holes are blasted in succession, large pieces being blockholed after each blast. If rapid extraction is required, two or three benches are carried. With water drills about 30 feet is drilled per shift and 30 tons broken per stope shift or 50 tons per drilling shift. Where conditions permit, the machine men are paid by the yardage broken. This orebody is fairly regular, and the stoping has therefore been systematically done.

Miscellaneous Mines

Goudreau Pyrite.—During the season of 1918 shipments from the Goudreau mine of the Nichols Chemical Company amounted to 90,613 tons.

Ore was shipped during the navigation season by rail from Goudreau to Michipicoten Harbor, thence by boat to U.S. plants of the General Chemical Company.

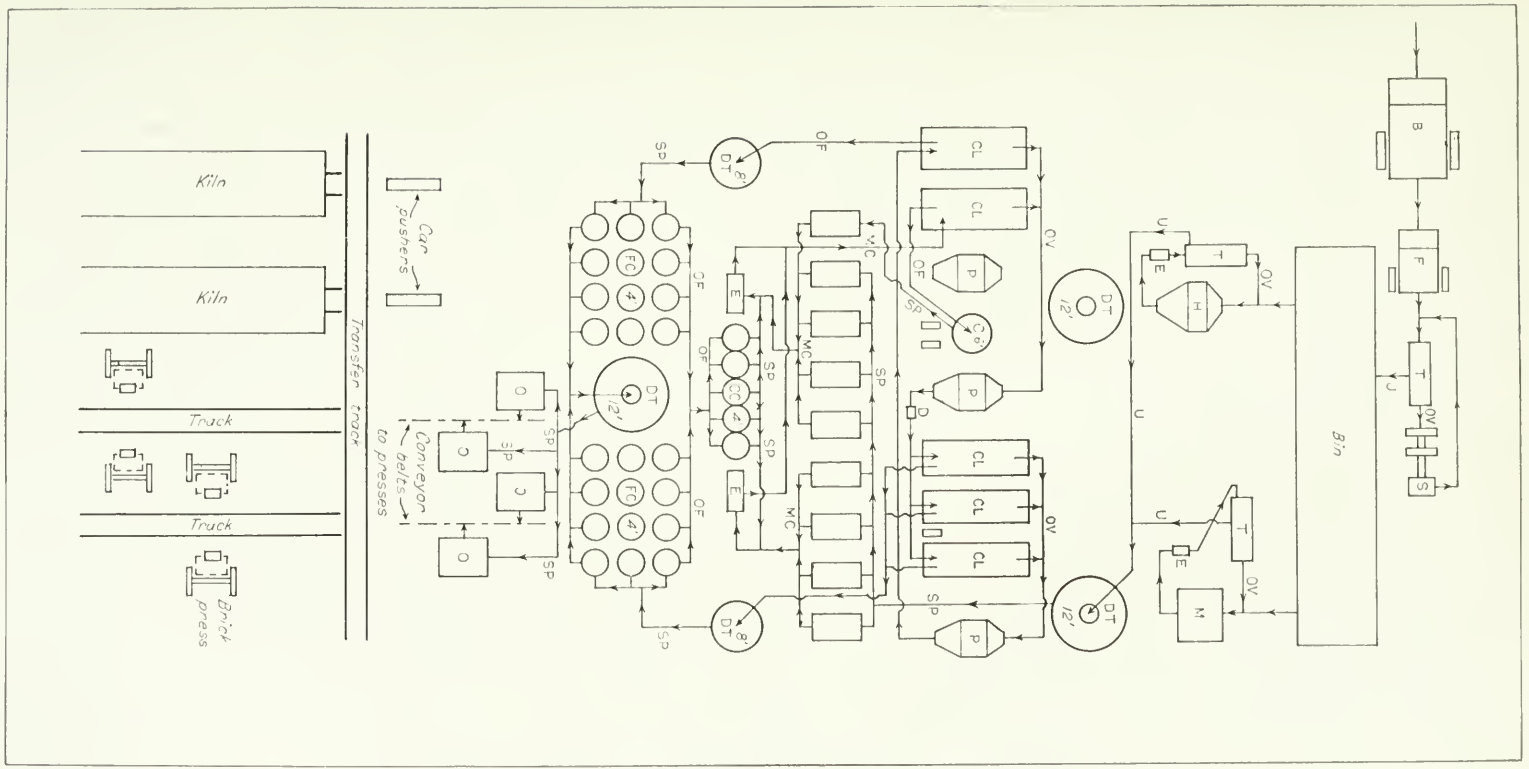
The ore shipped in 1918 was obtained from "C" deposit, which is situated about 1,000 feet from the mill. During 1918, a second deposit, known as the "Bear," was prepared for production. This deposit is situated one mile from the crushing plant, and the ore from it will be handled to the mill over a narrow-gauge track.

The crushing plant was entirely changed, the new installation including a No. 12 Gates gyratory crusher, which has greatly increased the production.

Diamond-drilling operations were pushed during 1918 on a property adjoining the Bear Deposit known as the Morrison No. 3. At the time of writing this report prospecting work on this property has not been completed, so that no accurate description of it is available.

Gerald G. Dobbs was superintendent at Goudreau for the season of 1918, employing about 200 men.

Moose Mountain Iron.—In 1918 work was continued at the mine and mill of the Moose Mountain, Limited, at Sellwood. The ore raised amounted to



FLOW SHEET OF THE MOOSE MOUNTAIN CONCENTRATING PLANT.

B—Buchanan crusher.
F—Farrell crusher.
S—Symons disc crusher.
M—Marcy mill.
H—Hardinge mill.
T—Trommel.
E—Elevator.
DT—Dorr thickener.
CL—Dorr classifier.
P—Pebble mill.
CC—Cleaner cones.
FC—Finishing cones.
O—Oliver filter.
OF—Overflow.
OV—Oversize.
U—Undersize.
SP—Spigot.
D—Demagnetizer.
MC—Magnetic concentrates.

54,271 tons, and the briquettes made and shipped to 26,385 tons. One hundred and forty men were employed.

The deposit at present being worked is developed by means of an adit 350 feet long and measuring 10 feet wide by 11 feet high. From the face of this adit two galleries branch, of the same size as the tunnel, "A" drift to the left 590 feet long, and "B" drift to the right, 514 feet long. Stoping is being carried on above each of these drifts. Chutes are put in the main drifts at 20-foot centres and sub-levels driven 14 feet above and parallel to these drifts.

In the mill and briquetting plant are the following: two jaw crushers, a 36-inch by 48-inch Buchanan, and a 20-inch by 30-inch Farrell; a No. 86 Marcy mill, and an 8-ft. Hardinge mill; five duplex Dorr classifiers, two 6-ft. by 20-ft. and three 6-ft. by 12-ft.; three 6-ft. Hardinge mills; nine Gröndal electro-magnetic separators; five Dorr thickeners, two 8-ft and three 12-ft.; 24 classifying cones; three demagnetizers; two vacuum and two low-pressure pumps; four Oliver filters 6 ft. by 6 ft.; four American Clay Manufacturing Co. No. 7010 four-mould brick presses; two roasting kilns, each 220 feet long. The moulds now used in making the briquettes are 8 in. by 2½ in. by 4 in.

The officers of the company are: president, Charles E. Herrman, New York; directors: L. B. Biller, Cleveland, O.; J. J. Mitchell and J. C. Hutchins, of Chicago; D. D. Mann and Wm. Mackenzie, of Toronto; Chas. H. Smith, John B. Dennis, Augustine L. Humes, David Dows, John F. Harris, all of New York; secretary, G. C. Lott, 17 Battery Place, New York. The head office is at Sellwood, Ont. The resident officers are: manager, A. J. Anderson; assistant manager, A. R. Globe; mill foreman, R. Sturgeon; mine foreman, J. G. Barron.

Quarries

East Neebish Island.—This quartzite quarry, owned and operated by the Dominion Mines and Quarries, Limited, was in continuous operation during the season of navigation in 1918.

I. Appleton, McLennan, Ont., is general manager, employing about 60 men.

Electro-Metals.—Electro-Metals, Limited, worked their quartzite quarry on the north shore of Georgian bay from May until October, 1918. The following machinery was added during the year—a 40 by 42-inch Power and Mining Machinery Co. crusher, a No. 6-D Gates crusher, a 200-h.p. Robb-Armstrong engine, a 150-h.p. r.t. boiler, and an electric light plant for lighting the quarry. Forty men in two shifts worked in the quarry, and 20 men were employed on the alterations to the plant. C. H. Rayner, Killarney, Ont., was in charge.

McPhail and Wright.—During the summer of 1918, the McPhail and Wright Construction Company, Limited, worked the quartzite quarry situated in the south-east quarter of the south half, Lot 12, Concession II, Deroche township, about a mile and a half north of Bellevue station, Algoma Central railway. The quartzite is shipped to the Algoma Steel Corporation, Sault Ste. Marie, Ont., for the manufacture of silica brick. The drilling was done by hand. Sixteen men were employed.

III.—DISTRICT OF TIMISKAMING

Gold

Boston Creek and Munro

Allied.—The Allied Gold Mines, Limited, has an authorized capital of 2,000,000 shares of a par value of $1.00.

The company owns what were formerly known as the Renaud and Cullen claims, being the north half of lot 1 in the sixth concession of Pacaud township, adjoining the Miller Independence on the northeast.

A shaft has been sunk to a depth of 100 feet. The equipment consists of a 25-h.p. upright boiler and a 5 by 5 hoist.

R. W. Norrington is manager.

Baldwin.—The shaft on this property was sunk to a depth of 200 feet, with 75 feet of drifting on the 100-ft. level and 90 feet of drifting on the 200-ft. level.

The mine is situated on lot 2 in the sixth concession of Eby township, at mileage 16½ on the Timiskaming and Northern Ontario Railway.

C. P. Charlebois is manager, employing about 20 men.

Bourkes Mines.—This property comprises the south half of lot 9 in the second concession of Benoit township, and is operated by Bourkes Mines, Limited.

The company has a capitalization of 2,500,000 shares of a par value of $1.00. The officials of the company are: Chas. Miller, president; Chas. Gentles, vice-president; A. Hunter, Secretary; J. J. Byrne, manager.

A vertical shaft has been sunk to a depth of 100 feet, and 594 feet of drifting and 150 feet of cross-cutting done on this level. From this level a winze has been sunk to the 200-ft. level, where 400 feet of drifting was done.

Buildings for the accommodation of 50 men have been erected, and plans are now being prepared for a mill; additional machinery is also being installed. The present plant includes two 40-h.p. locomotive boilers, a 210-cu. ft. compressor and two Jenckes hoists, one 7 by 10 and one 5 by 5.

Burton-Munro.—Operations at this property, on the north half of lot 11 in the first concession of Munro township, were suspended in February, 1918, and work was not resumed until the spring of 1919.

Croesus.—The Croesus mine in Munro township, owned by the Croesus Gold Mines, Limited, has been idle since February, 1918.

Kennedy.—On the Kennedy claims, seven in number, situated in the south-east corner of Boston township, the Mining Corporation of Canada did some surface prospecting under option in 1918.

Millistone.—The Millistone Mining Company is operating the south part of the north half of lot 1 in the sixth concession of Catharine township, formerly known as the Cotter Syndicate. This claim lies due east of the Miller Independence.

Trenching and diamond-drilling have been done under the supervision of J. Murphy.

Miller-Independence.—The Miller-Independence Mines, Limited, has an authorized capital of 700,000 shares of a par value of $1.00. The officers and directors of the company are: Geo. J. Miller, president, Dayton; William Stroup, vice-president, Dayton; Edward Rettich, treasurer, Germantown; John C. Schaeffer, secretary, Germantown; O. B. Brown, Geo. W. Ozias, J. A. Read, J. A. Beagard, of Dayton; Frank Grotch, Cobalt. Frank Grotch and W. E. Simpson, of Cobalt, are consulting engineers.

"A" shaft, vertical, 2 compartment, has been sunk to a depth of 200 feet; "B" shaft is sunk to a depth of 100 feet at an inclination of 25°; "C" shaft is 110 feet deep; "D" shaft is 210 feet in depth on a 45° incline. From "D" shaft on the 100-ft. level drifting has been done 70 feet to the west and 50 feet to the east, and on the 200-ft. level 200 feet of drifting has been done. The vein in this shaft averages from one to five feet in width, strikes east and west and dips to the south at an angle of 40°.

The equipment includes half of a 10-drill Rand compressor; 2 small hoists; 3 boilers, locomotive-type, 50-, 60-, 80-h.p., and a 25-h.p. upright boiler. A small mill for testing purposes was in operation during part of the year, the equipment including a 5-ft. Hardinge ball mill and one unit of the Grotch flotation machine.

Patricia Syndicate.—This property, formerly known as the Boston Hollinger, consists of two 40-acre claims in the north half of lot 3 in the sixth concession of Pacaud township, one mile southeast of Boston Creek station on the Temiskaming and Northern Ontario railway.

The mill, which is described in the Twenty-seventh Report of the Ontario Bureau of Mines, commenced crushing ore in June, 1918. In October milling operations were suspended and during the winter of 1918-19 the syndicate allowed the property to revert to the original owners.

In July, 1919, a forest fire destroyed the mill and all the surface equipment.

Kirkland Lake

Burnside.—The Burnside property adjoining the Tough-Oakes mine at Kirkland lake was operated in 1918 by the Aladdin Cobalt Mining Company.

The Burnside comprises 89.7 acres, being claims L. 1823 and L. 1822 in the township of Teck and L. 1821 in the township of Lebel. The head office of the company is at Finsbury Pavement House, London, England.

No. 2 shaft was sunk to a depth of 255 feet. On the 90-ft. level 113 feet of drifting and 122 feet of cross-cutting was done, while on the 152-ft. level there is 144 feet of drifting and 176 feet of cross-cutting. No. 3 shaft is now 337 feet deep with 56 feet of drifting and 60 feet of cross-cutting on the 120-ft. level, 35 feet of drifting and 155 feet of cross-cutting on the 220-ft. level, and 92 feet of cross-cutting on the 320-ft. level. At No. 3 shaft a 9 by 12 Ingersoll-Rand hoist was installed.

A mill 26 ft. by 68 ft. was built during 1918-1919. The equipment includes a 9 by 15 in. jaw crusher, a 6-ft. Hardinge mill, two 4 by 10 ft. amalgamating tables, two No. 6 Wilfleys, a 10-ft. Dorr thickener and a 75-ft.h.p. 2,200-volt motor.

Forty men were employed. Chas. Richardson is resident manager.

Canadian Kirkland.—The Canadian Kirkland Gold Mining Company, Limited, continued work on the four Killoran claims in Teck township until February, 1918. Two shafts were sunk, one 60 feet and one 30 feet deep. There are two small boilers and two small hoisting engines on the property.

The directors are: president, A. A. Amos, Cobalt; vice-president, George Tough, Haileybury; secretary-treasurer, G. G. T. Ware, Haileybury; D. H. Angus, Cobalt; R. W. Brigstocke, Kingston, Ont.

In May, 1919, the Crown Reserve Mining Company began work on these claims under an option and are deepening the 30-ft. shaft.

Elliott-Kirkland.—The Elliott-Kirkland Gold Mines, Limited, has an authorized capital of 2,000,000 shares of a par value of $1.00. The officers and directors are: S. Harry Worth, Philadelphia, president and treasurer; W. A. Gordon, Haileybury, secretary; J. W. Wood, Haileybury; R. H. Lyman, Cobalt; E. W. Kearney, Haileybury.

The company owns claims 1616, 1617 and 3044 in Teck township. During 1918 the shaft was sunk from 333 feet to 537 feet, and on the fourth level 75 feet of drifting and 70 feet of cross-cutting done. On the fifth level 193 feet of cross-cutting and 369 feet of drifting were completed during the year.

The equipment includes a 60-h.p. boiler, locomotive-type, a 9 by 12 hoist and a 300-cu. ft. compressor.

J. W. Morrison is consulting engineer, employing 18 men.

Hohenaur.—After sinking a shaft to a depth of 40 feet, the Temiskaming Mining Company, Limited, ceased work in February, 1918, and dropped the option on the Hohenaur claim in Teck township.

Kirkland Lake.—The Kirkland Lake Gold Mining Company, Limited, has an authorized capital of 2,000,000 shares of a par value of $1.00. The company owns 362 acres. The Beaver Consolidated Mines, Limited, has control of this company's stock.

The officials of the company are: F. L. Culver, president and general manager; F. C. Finkenstaedt, vice-president; H. E. Tremain, secretary-treasurer. The directors are: F. C. Finkenstaedt, F. L. Culver, F. L. Lovelace, J. H. Black, Wm. Thos. Mason, Wm. E. Stevenson, H. E. Tremain, Howard L. Churchill. The head office of the company is in the Lumsden Building, Toronto.

The main shaft was continued to the 500-ft. level with large working stations on the 300-, 400- and 500-ft. levels, which are connected with corresponding levels from No. 2 shaft, 700 feet in depth.

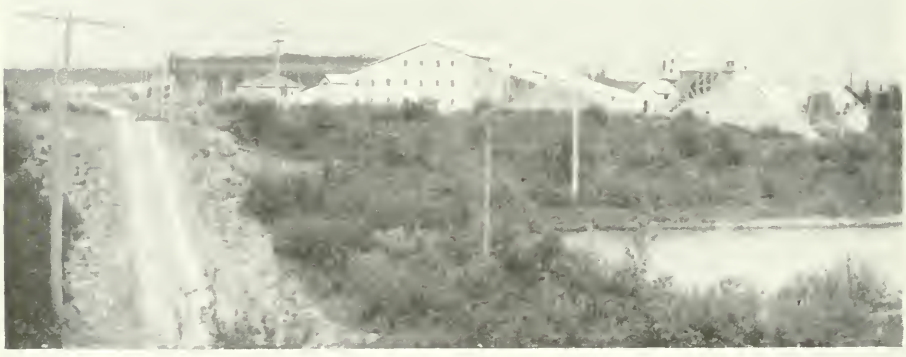
The following is a summary of the development work: drifting, 2,450 feet; cross-cutting, 1,553 feet; sinking, 1,207 feet; station-cutting, 893 cubic yards.

The new shaft house over the main shaft has been completed, and the machinery installed to give the ore its preliminary crushing. Raising the ore direct from the mine, it is dropped over a grizzly into an ore bin of 500 tons capacity. From this bin the ore is fed into a Buchanan jaw crusher, passed over a magnetic pulley, and through a trommel or screen, the undersize from this screen passing direct to a

travelling belt which conveys it to a large bin in the new mill. The oversize is crushed again by a Tellsmith crusher, the product dropping on to the travelling belt, thence to the mill bin. The mill, which has been erected during the year, has a capacity for treating 150 tons of ore per day, and is fully equipped for recovering the gold by the counter-current decantation system. The installation includes an eight-foot Hardinge ball mill, Dorr classifier, large tube mill, fifteen solution tanks, pumps, presses and compressor.

A water system for fire protection has been put in and a new refinery completed.

The mining plant consists of: three boilers, 30-, 40- and 60-h.p.; a single drum hoist electrically driven; a 10-drill Sullivan steam-driven compressor and a 4-drill Sullivan steam-driven compressor; also water tanks; all at the old power station. A new power house has been built containing a 12-drill electrically driven compressor; a large double drum electrically driven hoist and equipment for machine shop; transformer house and blacksmith shop.



Lake Shore mine, Kirkland Lake, June, 1919.

Kirkland Porphyry.—The Kirkland Porphyry Gold Mines, Limited, were not operating between June and October, 1918. In October, J. Houston was appointed manager and active development was resumed. At the end of the year the main shaft was 400 feet deep, with levels at 147, 238, 280 and 400 feet.

On the first level 52 feet of cross-cutting has been done, and on the second level 27 feet. Drifts have been extended to the west 65 feet, and to the east 58 feet on the vein. On the third level 28 feet of cross-cutting and on the fourth level 40 feet of cross-cutting were driven to the vein, but no drifting had been done on the vein on these levels at the close of 1918.

The equipment comprises a 60-h.p. boiler, a 4-drill electrically driven compressor, and an 8 by 12 Ingersoll-Rand hoist. An average of 20 men is employed.

Lake Shore.—The Lake Shore Mines, Limited, at Kirkland Lake, have an authorized capital of $2,000,000 in shares of a par value of $1.00, all of which have been issued. The officials of the company are Harry Oakes, president and managing director; Arthur G. Slaght, vice-president; Conrad E. Wettlaufer, treasurer;

Kirkland Securities, Limited, secretary. In addition to the above, the directors include Dr. W. P. St. Charles, Toronto, and A. E. Wende, Buffalo, N.Y. R. C. Coffey, Kirkland Lake, is mine manager, and the head office is at Kirkland Lake.

The following information is taken from the fourth annual report of the company, which covers the fiscal year ending November 30th, 1918.

The mill was completed and operations commenced on March 8th. From that time to the end of November, 14,948 tons of ore were treated, from which were recovered $370,124.41, or a recovery of $24.76 per ton.

The following table shows the sources from which the ore was taken:

	Tons.
Surface (stock dump)	227
100-ft. level	1,343
200-ft. level	3,558
300-ft. level	329
400-ft. level	9,738
	15,175

An analysis of the above, distinguishing ore from development and ore from mining, may be of interest:

	Tons.	Per cent.
From stopes	4,280	28.20
From raises	72	.47
Surface dump	207	1.37
Drifting	10,616	69.95
Total ore hoisted	15,175	99.99
Ore in bins	227	
Ore milled	14,948	

The following table shows the underground development. The annual report further states that approximately 80 per cent. of all drifting has been in ore of milling grade.

SYNOPSIS OF DEVELOPMENT.

	Drifting	Cross-cutting	Raising	
On No. 1 Vein—				
100-Foot Level		27 feet		
200-Foot "	167 feet	190 "	101 feet	
300-Foot "			94 "	
400-Foot "	543 feet	19 feet		
	710 feet	236 feet	195 feet	
			Total...	1,141 feet
On No. 2 Vein—				
200-Foot Level	589 feet	179 feet		
400-Foot "	612 "	390 "	50 feet	
	1,291 feet	569 feet	50 feet	
			Total...	1,820 feet
			Grand Total.	2,961 feet

A dividend of 2½ per cent., amounting to $50,000, was paid on August 20th, 1918, and another dividend of 2½ per cent. was declared payable on December 10th, 1918. In addition, $50,000 was invested in Canadian Victory Loan bonds.

Minaker Kirkland.—The Minaker Kirkland Gold Mines, Limited, has an authorized capital of 1,500,000 shares of a par value of $1.00. The directors and officers of the company are: Fred. A. Day, president; George A. Bagshaw, secretary-treasurer; W. A. Gordon, A. E. Cranstoun, M. B. Boissonnault. The head office is at Haileybury.

The company owns claims 16634, 16633, 16726 and 3468 in Teck township, lying to the south of the Lake Shore property.

At the end of the year 1918 No. 1 shaft was 83 feet in depth and No. 2 shaft 25 feet.

The equipment includes a 50-h.p. boiler, a 6 by 8 hoist, and a 2-drill compressor.

T. J. Flynn was manager.

Teck-Hughes mine, June, 1919. The two buildings with verandahs in the foreground on the left belong to the Kirkland-Porphyry.

Montreal Kirkland.—The Montreal Kirkland Gold Mines, Limited, during 1918 sank a 100-foot shaft on the Killoran claims, L 6679, 6680, 6681 and 6682.

Ontario Kirkland.—The Ontario Kirkland Gold Mines, Limited, are operating L 2678 and L 2679, formerly known as the Hurd claims, in Kirkland lake. A two-compartment shaft was sunk to the 100-ft. level, and 20 feet of cross-cutting and 25 feet of drifting done. Early in 1919 sinking was resumed, it being the intention to continue the shaft to a depth of 300 feet. An electrically driven hoist and compressor are installed.

Ralph Hurd is manager, employing 12 men.

Teck-Hughes.—The Teck-Hughes Gold Mines, Limited, has an authorized capital of 2,500,000 shares of a par value of $1.00, of which 2,134,000 shares have been issued. The officers and directors of the company are: Chas. L. Denison, president; Robert W. Pomeroy, vice-president; A. D. Crooks, secretary; H. C. Clarke, treasurer. In addition to the above Albert W. Johnston and J. F. Thomp-

son, of New York City, are directors. The head office of the company is at 14 Wall Street, New York.

The following information regarding operations at the mine is taken from the fifth annual report of the company.

The most important development work carried on was the further opening of the No. 3 vein on the 4th and 5th levels. On the 4th level, not only was the vein drifted on to the westward, but considerable raising and cross-cutting were done. The winze from the 4th level was continued to the 6th level, and the 5th level was started from it, drifts being run east and west on the No. 3 vein and a cross-cut being made to the north connecting with the No. 1 shaft by raising the latter from the 5th to the 4th level. The vein as far as developed on the 5th level was found to yield quite as good ore as on the 4th level, with the ore bodies located at corresponding places. Raises and stopes from the 4th level were carried up in ore, but this work was not advanced far enough to enable complete estimates of blocked ore to be obtained.

SUMMARY OF DEVELOPMENT

—	Drifting Feet	Cross-cuting Feet	Shaft sinking Feet	Station cutting Feet	Winzing Feet	Raising Feet	Stoping and side slicing Tons
At Sept 1, 1917...	3,247	1,647	716	64	170	.....	3,400
Year's Performance	1,413	652	100	25	130	220	13,500
At Sept. 1, 1918...	4,660	2,299	816	89	300	220	16,900

Seventeen thousand six hundred and eighty-six tons of ore and 6,576 tons of waste were hoisted from the mine. One thousand eight hundred and eighty-four tons of ore were sent to the low-grade stock-pile, and 15,802 tons went to the mill. Of the ore hoisted 8,891 tons came from development, and 8,795 tons from stoping and side slicing.

From August 31st, 1917, to July 2nd, 1918, the mill treated 15,879 tons of an average value of $7.87 per ton.

In May, 1918, D. L. H. Forbes was appointed general superintendent. In July, owing to scarcity of labour and high cost of materials, both mine and mill were shut down. Operations at this property were resumed in the autumn.

Tough-Oakes.—The Tough-Oakes Gold Mines, Limited, stopped mining and milling operations July 31st, 1918. The mine was kept pumped out and work underground was resumed March 15th, 1919.

In 1918 there was 2,528 feet of drifting and 537 feet of crosscutting done: 22,000 tons of ore was milled.

An amalgamation of the properties of the Tough-Oakes, Burnside and Sylvanite mining companies is being worked out.

Wright-Hargreaves.—The Wright-Hargreaves Mines, Limited, has an authorized capital of 2,500,000 shares, of a par value of $1.00. The officers and directors are: Oliver Cabana, Jr., president; Gerard F. Miller, secretary; Clara B. McCallum, treasurer; Edwin Langmiller, Albert Wende, Oliver Donaldson, Ralph Hochsteller, all of Buffalo, N.Y.; Wm. H. Wright, Haileybury, W. C. Young, Toronto,

In July, 1918, the mine was shut down, and preparations for the erection of a headframe and a 150-ton mill were made under the direction of James Grant.

Prior to the shut-down No. 3 shaft was sunk to a depth of 425 feet, and on the fourth level 600 feet of cross-cutting done towards No. 1 shaft. On the 300-ft. level of No. 2 shaft 400 feet of drifting was done.

Larder Lake

Associated Goldfields.—The Associated Goldfields Mining Company, Limited, has an authorized capital of 5,000,000 shares of a par value of $1.00 each, of which 2,500,000 shares have been issued.

The directors of the company are: Geo. A. MacKay, Toronto, president and managing director; A. A. McFall, Toronto, vice-president; R. W. MacKay, Toronto, secretary-treasurer; D. H. McCartney, Milton; J. Dinwoody, Toronto; Albert Singer, Toronto. In view of the extensive development policy planned for 1919 an advisory board was appointed. This advisory board is composed of 32 stockholders. The head office of the company is at 306 C.P.R. Building, Toronto.

Wright-Hargreaves mine, June, 1919.

On the Harris-Maxwell mine 100 feet of drifting was done on the 500-foot level.

At the Reddick mine 700 feet of cross-cutting and drifting was done on the 100-ft. level.

At this property a 2,700-cu. ft. Blaisdell air compressor, electrically driven by a 325-h.p. motor with the necessary transformers and electrical equipment, was installed.

C. G. Daimpré is general manager, employing an average of 40 men.

Porcupine

Davidson.—The Davidson Gold Mines, Limited, worked continuously during 1918 on lot 2, concession 5, township of Tisdale. On the 300-ft. level, 407 feet north of No. 1 shaft, a winze was sunk 220 feet, cutting an ore body previously located by diamond drilling. Early in 1919 electric power was supplied to the

mine by the Northern Canada Power Co. The ten-stamp mill is crushing about 30 tons per day. The officers of the company are G. C. Crean, president; vice-president, H. B. Sutherland: managing director, H. H. Sutherland: director, W. C. Lacey: secretary-treasurer, L. C. Platt, Toronto. In December, 1918, N. J. Evered succeeded D. Sloan as manager. F. D. Henderson is mine superintendent.

Dome.—The Dome Mines Company, Limited, has an authorized capital of $5,000,000, of which $4,000,000 has been issued.

The officers of the company are: president and treasurer, J. S. Bache: first vice-president, W. S. Edwards: second vice-president, C. D. Kaeding: third vice-president, H. P. De Pencier: secretary, Alex. Fasken: treasurer and assistant secretary, Alfred H. Curtis: assistant treasurer, Sol. Wexler. The directors are: J. S. Bache, W. S. Edwards, Alex. Fasken, G. C. Miller, T. R. Finucane, A. H. Curtis, C. Hoyt, C. D. Kaeding. The last-named is general manager. The head office is at 36 Toronto St., Toronto.

The following information is taken from the eighth annual report of the company, being for the fiscal year ending March 31st, 1919:

On account of the continuance of the conditions which caused the cessation of milling operations in December, 1917, the milling plant was not operated, and hence no ore was mined and hoisted. Following out the policies laid down at the last annual meeting, and from time to time since, a considerable amount of work has been done in the mine, and the plant has been carefully cared for in the interim.

The completion of the ore and waste handling systems in connection with No. 3 shaft (the magnitude and scope of which is not generally understood) is undoubtedly one of the most important events we have been able to report, and a resumé of this work is given for your information. The work started in 1915 (which has been interrupted and delayed from so many causes) consists of a large square type shaft sunk on the footwall side of the ore-bearing zone, stations at the 3rd, 5th, 6th, 7th, 8th, 9th, and 10th levels and loading pockets for ore and waste at the 6th, 7th, 8th and 10th levels. The 8th level, which is 850 feet vertically below the surface, has been made the main haulage and loading level, and the large 36 x 54-inch jaw crusher, which was installed temporarily on the 5th level at No. 2 shaft, has been permanently set below the 8th level and ore passes have been driven in such a manner that the entire ore tonnage (now estimated at nearly two million) above the 8th level will be handled only once by manual labour, when it is drawn from the stopes into the ore cars. After this it will flow into and through the large crusher, and is never again touched except by mechanical means in its flow out of the mine, through the secondary crushing plant and through the mill where the values are extracted. The same arrangement has been provided for the waste rock, utilizing old No. 2 shaft, now obsolete, as the main pass from the upper levels down as far as the 8th level, with the exception that the waste rock does not pass through the crusher, as it is always broken up small from the nature of the shot firing in development work. Loading pockets for waste are at the 8th and 10th levels. This section will insure the maximum quantity of unpayable material being kept out of the ore stream. During the progress of this work every level of the new shaft had to be connected with the existing workings of the mine, and temporary measures had to be taken in many instances to insure the continuance of the output during 1916 and 1917. These conditions are now all behind us, and the mine has a thoroughly modern and adequate plant and system serving it to a depth of 1,150 feet with which, if necessary, upwards of 3,000 tons of ore and waste can be flowed out in two shifts of eight hours each, and men and materials sent in to the workings. Thirty men can be accommodated at each trip on the man-cage, or the electric locomotives can be moved from level to level or to surface for repairs. The skips working in balance haul four tons per trip at a speed of 1,100 feet per minute. The entire system is served with electrically operated signal bells, lights and telephones.

With regard to the ore reserve there has been no change in the estimates since the last statement, the tonnage being sufficient to insure the maximum capacity operation of the milling plant for a period of four years.

The development is shown in the following table:

SUMMARY OF DEVELOPMENT WORK FOR YEAR 1918-19

Level	Drifts	Cross Cuts	Raises	Box Holes	Shafts	Stations	Pockets	Total	Diamond Drilling	Total	Excavation Cu. Ft.	Dome Ext. Drift
5th	5							5		5		
6th		8	171					179	751.75	930.75		92
7th			106					106		106	3,600	
8th	71	55	138.5					264.5	646.5	911	22,000	
9th												
10th	1,267	65.5				41	56	1429.5	1418,5	2848.0		
Shaft					199			199.0		199.0		
Total	1,343	128.5	415.5		199	41	56	2183.0	2816.75	4999.75	25,600	92

Waste hoisted—22,165 tons.

Regarding the acquisition of the Dome Extension, President Bache of the Dome Mines Company gives the following information in the report to the directors:

Under an agreement entered into between the Dome Extension Mines Company, Limited, and this company, we have the option to purchase the property and assets of that company for 76,666 fully paid shares of the capital stock of this company. Under this agreement your company has no obligation, but if it desires to keep the option in force an average sum of $3,000 per month in exploration and development must be expended. The option expires the 15th day of March, 1920. Your directors will, so long as conditions justify, continue exploration and development work on the Dome Extension property and if, in their opinion, results justify the completion of the purchase, a special meeting of the shareholders will be called and thereat all the available information will be laid before them. The programme of exploration now being pursued consists of cross-cutting on the sixth level in the Dome Extension property to the ore zone previously located by diamond-drilling. This work has now progressed to the extent that the zone has been penetrated by a cross-cut which discloses ore of about $4 grade.

Dome Lake.—The following particulars regarding the Dome Lake Mining and Milling Company, Limited, are abstracted from the company's annual report for the year ending December 31, 1918:

The mine was worked continuously. Development was confined to the No. 3 vein to the west of the shaft on the 300-, 400-, 500-, and 600-ft. levels. Ore hoisted amounted to 11,517 tons, of which 1,258 tons came from development. The summary of development work is as follows:

	In 1918 Feet	Previous to 1918 Feet	Total to Jan. 1, 1919 Feet
Drifting	644	9,032.6	9,676.6
Crosscutting	459	3,604.6	4,063.6
Raising	103	1,617.0	1,720.0
Winze-sinking	100	277.9	377.9
Shaft-sinking	80	935.5	1,015.5
Total	1,386	15,467.6	16,853.6

The mill was run until the middle of November, when it was closed down for the annual clean-up and to make certain changes. In March, 1918, the new cyanide plant was put in

operation, and since that time the average extraction has been over 87 per cent., whereas it was 66 per cent. the preceding year when amalgamation only was used.

Ore reserves are estimated to be: broken ore, 250 tons, worth $2,800, and ore in place, 2,000 tons, worth $23,200. Additional ore is being developed on the 600-ft. level.

The directors are: president, F. L. Bapst; vice-president, A. A. McKelvie; secretary-treasurer, F. L. Hutchinson; general manager, C. L. Sherrill; T. McCamus, W. H. Kinch, S. J. Dark. The head office is at New Liskeard, Ont. C. A. Randall, South Porcupine, Ont., is resident manager.

Hollinger Consolidated.—The following information regarding the operations of the Hollinger Consolidated Gold Mines, Limited, is taken from the eighth annual report of the company, for the year ending December 31, 1918:

The progress made in the mine during the year is summarized as follows:

Level	Shafts	Drifts	Cross-cuts	Raises	Diamond Drilling	Timbering		Excavation
						Shafts and Winzes	Stopes	
	feet	feet	feet	feet	feet	feet	feet	tons
100 feet	.....	354	139	82	.....	.....	.....	50
200 feet	.....	1,620	1,016	452	2,246	.....	1,641	164
300 feet	.....	1,317	1,370	275	1,783	.....	1,633	75
425 feet	.....	2,223	2,016	536	1,329	.....	974	957
550 feet	.....	1,346	3,170	47	2,601	.....	29	1,477
675 feet	.....	1,813	1,953	330	730	.....	.....	4,319
800 feet	268	307	3,059	474	1,118	194	.....	1,693
950 feet	8	7	9	196	299	20	.....	1,304
1,100 feet	.....	.....	356	.....	.....	.....	.....	1,161
1,250 feet	.....	41	827	.....	.....	.....	.....	.....
Total	276	9,028	13,915	2,392	10,106	214	4,277	11,200

Total sinking, drifting, cross-cutting and raising, 25,611 feet.

The ore hoisted in 1918 amounted to 580,002 tons, of which 12.9 per cent. came from development; 318,237 tons of broken ore remained in the stopes at the end of the year.

The ore reserves are now estimated as follows:—

—	Tons	Gross value
Above the 425-ft. level	2,190,270	$20,311,230
Between the 425-ft. and 800-ft. levels	1,860,370	16,751,510
Below the 800-ft. level	224,930	1,912,790
Veins not developed underground but calculated on a basis of 100-ft. depth	212,020	2,091,065
Surface dumps	1,490	13,410
Total	4,489,080	$41,080,005

The value of ore reserves at the end of 1917 was estimated at $40,231,435. No effort was made to increase the tonnage of ore reserves, owing to adverse labour conditions and the high price of supplies. Work below the 800-ft. level was practically suspended for the same reasons.

The milling results were: 578,755 tons milled with an average value per ton of $10.24; net values recovered, $5,752,370.87; average tons milled per day, 1,590 tons; per cent. of possible time run, 64.1; tons milled per 24 hours' running time, 2,480; stamp duty per 24 hours' running time, 15.5 tons; solution precipitated per ton of ore, 2.38 tons; value per ton in tailings, $0.30; cyanide consumed per ton of ore, 0.447 lbs.; zinc consumed per ton of ore, 0.427 lbs.; zinc consumed per ton of solution, 0.180 lbs.; lime consumed per ton of ore, 2.41 lbs.; lead acetate consumed per ton of ore, .028 lbs.; average value of pregnant solution, $4.153.

The "Plant and Development" accounts are as follows:—

Year	Plant		Development	
	Expended	Written off	Expended	Written off
	$ c.	$ c.	$ c.	$ c.
1910—1915	1,839,910 05	529,480 89	1,155,644 67	379,346 37
1916	599,417 16	150,000 00	125,593 32	.....
1917	673,237 52	100,000 00	131,224 23	.....
1918	118,379 14	375,000 00	5,006 54	.....
Total.....	3,230,943 87	1,154,480 89	1,417,468 76	379,346 37

The present valuation of $2,076,462.98 for plant is 64 per cent. of the total cost of same. The following table shows the production and dividends of these mines:—

	Year	Tons of Ore Milled	Values Recovered	Dividends Paid
			$ c.	$
Hollinger Gold Mines, Ltd., and Acme Gold Mines, Ltd.	1911	1,000	46,082 52	.....
	1912	45,195	933,682 00	270,000
	1913	140,131	2,488,022 58	1,170,000
	1914	211,846	2,719,354 47	1,170,000
	1915	441,236	4,205,901 69	1,720,000
Hollinger Consolidated Gold Mines, Ltd.	1916	601,854	5,073,401 05	3,126,000
	1917	508,139	4,261,938 72	738,000
	1918	578,755	5,752,370 87	1,230,000
		2,528,876	25,480,753 90	9,424,000

The average number of men employed during the year was 1,061, distributed as follows: mine, 698; mechanics, 154; mill and refinery, 121; staff and miscellaneous, 88.

The officers of the company are: president, N. A. Timmins, Montreal; vice-president and secretary-treasurer, D. A. Dunlap, Toronto; directors: L. H. Timmins, Montreal; J. B. Holden, Toronto; P. A. Robbins, Timmins; J. R. Timmins, Timmins; Dr. W. L. McDougald, Montreal.

P. A. Robbins resigned as general manager in 1918, and was succeeded by A. F. Brigham, formerly manager of the Jagersfontein Diamond Mines, South Africa. The other resident officials are: general superintendent, Chas. G. Williams; mill superintendent, E. L. Longmore; mechanical superintendent, R. W. Robbins; production superintendent, A. W. Young; development, superintendent, R. T. Regnell; mine inspector, Benjamin Richards.

McIntyre.—A Nordberg hoisting engine is now in operation at the No. 5 shaft. It has a double cylindrical drum keyed to the shaft, 6 ft. diameter by 44-in. face grooved for 1-in. cable to carry the cage, and 5 ft. diameter by 40-in. face grooved for ⅞-in. cable to carry the counterweight. The double-deck cage, which is on order, will weigh 3,500 lbs.; the counterweight weighs 3,750 lbs. The maximum hoisting speed is 750 feet per minute. The gear is Wuest, single-reduction, of 2½ diametral pitch and 9-in. face with 16 teeth on the pinion and 193 on the gear. The engine is equipped with an oil-operated post brake, a liquid controller, a Francke coupling, a dial indicator and a Welch safety device. It is driven by a 125-h.p. motor, 485 r.p.m., 500 volts, and 25 cycles.

During the year ending June 30, 1919, there were milled 179,875 tons of ore of an average grade of $9.73, with a gold production of $1,670,956.41. The underground work was as follows:

Level	Drifts	Cross-cuts	Raises	Winzes	Shafts	Stations	Sumps	Pockets	D.H. holes	Total
ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
200	.....	.....	.....	42.5	.....	.....	.....	.....	1,414	42.5
300	.....	.....	.....	.....	.....	6	.....	.....	.....	6.0
400	72	.....	23	.....	.....	.....	.....	.....	.....	95.0
500	210	.....	.....	.....	.....	.....	.....	.....	.....	210.0
600	751	77	.....	.....	.....	.....	.....	.....	313	828.0
700	.....	.....	.....	.....	.....	.....	.....	.....	936	.....
890	955	35	217	.....	.....	.....	.....	.....	669	1,207.0
900	329	19	.....	.....	.....	.....	.....	.....	909	348.0
1,000	1,194	298	.....	81.0	.....	55	139	.....	4,400.4	1,767.0
1,125	1,308	363	329	.....	132	96	.....	121	769	2,349.0
1,250	.....	20	.....	.....	.....	25	.....	.....	.....	45.0
.....	4,819	812	569	123.5	132	182	139	121	9,410.4	6,897.5

The officers of the company are: president, J. P. Bickell; vice-president, Henry M. Pellatt; secretary-treasurer, M. P. Van der Voort, all of Toronto; directors, W. J. Sheppard, Waubashene; J. B. Tudhope, Orillia; E. F. Johnston, Toronto; H. D. Symmes, Niagara Falls; general manager, R. J. Ennis; mine superintendent, J. E. McAllister; mill superintendent, A. Dorfman.

North Davidson.—Work on this property on Lot 3, Concession six, township of Tisdale, was confined to 1,000 feet of diamond drilling. The president of the company is R. T. Jeffrey, and the managing director L. G. Harris, Royal Bank Building, Toronto.

Porcupine-Crown.—On the Porcupine-Crown gold mine, near Timmins, the development work done in 1918 amounted to 700 feet. The ore milled amounted to 10,907 tons, yielding $105,246.52, or $9.64 per ton milled. The extraction was 97.09 per cent. In July, work was stopped on account of the abnormal costs of labour and supplies.

In February, 1919, when an inspection of this mine was made, ten men were employed timbering the stope above the first level east of the shaft.

The mine is owned by Porcupine-Crown Mines, Limited, of which the officers and directors are the same as for the Crown Reserve Mining Company, Limited. The head offices of the company are at 145 St. James Street, Montreal, and 18 Toronto Street, Toronto. H. J. Stewart, Cobalt, Ont., is acting manager, and A. S. Crowe, Timmins, Ont., mine foreman.

Porcupine V. N. T.—During 1918, the Porcupine V. N. T. Gold Mines, Limited, continued work from the beginning of the year up to July 17th. The mill was run on ore from the North Thompson and a small amount from the dump, 15,134 tons being treated.

A drift 200 feet long was run from the North Thompson shaft on the 400-ft. level to the Krist property, and exploratory work done on the Krist under contract.

The officers of the company are: H. W. Ward, president, New York; F. H. Hamilton, vice-president, London, England; E. G. Holloway, secretary, New York. The head office of the company is at 50 East 42nd Street, New York.

M. J. Evered was manager up to November; about 110 men were employed.

Schumacher.—The underground work at the property of the Schumacher Gold Mines, Limited, up to May 15th, 1918, consisted of cleaning out old stopes. The mill was operated up to July 15th, 1918, when all broken ore had been treated. About 100 men were employed.

The officers of the company are: F. W. Schumacher, president; F. L. Culver, vice-president; James T. Murdoch, secretary-treasurer, 85 Bay Street, Toronto; T. J. Harwood is manager.

Whelpdale.—The Porcupine Whelpdale Mines, Limited, has an authorized capital of 2,500,000 shares of a par value of $1.00. The officers and directors of the company are: J. A. Kilpatrick, president; B. J. Simons, secretary-treasurer; F. P. Jones, Montreal; R. M. Gray, S. B. Dawson, R. L. Marks, J. O. Gadsby, G. Tamblyn, C. M. Dineen, all of Toronto. The head office of the company is 911 Royal Bank Building, Toronto.

The property of the company comprises the north half of lot eleven in the third concession of Tisdale township.

A shaft has been sunk to a depth of 114 feet, and on the 100-ft. level drifts extend east 80 feet and west 26 feet.

The equipment includes a 4-drill compressor, a 5 by 7 hoist and two boilers, 30-h.p. and 70-h.p. respectively.

Otisse gold mine, Matachewan, operated by the Colorado-Ontario Development Company.

Matachewan

Colorado-Ontario (gold).—The Colorado-Ontario Development Company continued prospecting work on the Otisse and Robb gold claims in Powell township during 1918. A large amount of trenching was done, and 13 diamond-drill holes, averaging about 400 feet in depth, were put down.

Early in 1919 the company was reorganized under the name of the Matachewan Gold Mines, Limited, the officers of which are: W. J. Boland, 2 Toronto Street, Toronto, secretary; E. T. Boland, Toronto, president. T. J. Flynn is manager.

Wallace (gold).—The Crown Reserve Mining Company did some surface work in 1918 under option on the six Wallace mining claims situated north of the Otisse property in the Matachewan gold area.

West Shiningtree

Claims were first staked for gold in West Shiningtree in 1911, and more or less prospecting has been going on since that time. The area is connected by a 20-mile wagon road with Westree, a station on the Canadian National railway, 80 miles north of Sudbury. The gold occurs in quartz veins of various sizes, and in a variety of rocks, viz., pillow lava, rusty carbonate, hornblende schist, conglomerate, greywacké and porphyry, mainly of Keewatin age. Not enough work has been done yet to place a property beyond the prospect stage, but some small ore-shoots have been developed. The working properties in September, 1919, lie in the northern part of the area, i.e., 5 miles northeast of West Shiningtree lake, and are described in the following paragraphs.

Northern Section.

Atlas.—The Atlas Gold Mines, Limited, is prospecting one claim, No. 2504, which lies one-half mile southeast of the Westree, and is on the south end of Wasapika lake, in MacMurchy township. A few test pits have been sunk on different veins, and an adit was commenced in September, 1919, into the hillside to prospect an east-west gold-bearing quartz vein which outcrops about 60 feet above on the hill top.

Mr. Hershman is in charge of prospecting, and five men are employed.

The company has an authorized capitalization of $2,000,000, divided into shares of a par value of $1.00. The officials of the company are: Mark Workman, president; A. M. Bilsky, vice-president; Isaac Friedman, secretary; Jacob A. Jacobs, director, all of Montreal: Israel Singer, Toronto. The head office is in the Confederation Life Building, Toronto.

Herrick.—The holdings of the Herrick Gold Mines, Limited, comprise mining claims S. 4096, 4097, 4098, 4105, 4106, 4107, in the township of Churchill, formerly known as the Knox claims. The authorized capitalization is $1,000,000, divided into shares of a par value of $1.00.

The provisional directors of the company are: Russell Evans, Daniel Sherriff, Fannie Cox, Elsie White and May Stern, all of Toronto.

A vein, varying from a few inches to a few feet in width and enclosed by conglomerate, greywacké and mica-porphyry, has been traced in a north and south direction for 1,000 feet. Development work consists of a 50-ft. shaft and considerable diamond-drilling. One drill hole tapped the vein at 400 feet, and a second drill hole is now being put down.

George R. Rogers is in charge of operations and about 15 men are employed.

West Tree.—The holdings of the West Tree Mines, Limited, comprise mining claims W.D. 1418, 1419, 1420 and 1421. The authorized capitalization of the company is $3,000,000, divided into shares of a par value of $1.00.

The directors of the company are: Wm. David McKay, Ottawa: Clayton Smith Corson, Gideon Grant, Geo. R. Rogers, W. Jos. Butler, Arthur E. Way, Lina Rogers, all of Toronto; secretary, Gideon Grant. The head office is in the Bank of Hamilton Building, Toronto.

There are two shafts on the property, about 400 feet apart and separated by a narrow portion of Michiwakenda lake. The easterly shaft is 40 feet deep and

produced some spectacular gold specimens. The westerly shaft is 67 feet deep (September, 1919), having been sunk on a number of parallel quartz stringers, some of which carry gold. The sinking was done by hand, and the broken material hoisted by a small steam hoist.

Alex. Mitchell is in charge of prospecting work, about 12 men being employed.

There are numerous other properties in this northern section on which gold has been found and considerable work done, but these are now more or less idle. They include the following: Wood, Bennett, McIntyre, Saville, Foisey, Adair, Churchill, Queen of Sheba and Cochrane.

Wasapika.—The Wasapika Gold Mines, Limited, operates claims T.R.S. 2529 and 2530 in the township of MacMurchy. The authorized capitalization of the company is $1,000,000, divided into shares of a par value of $1.00.

The officers of the company are: president, George R. Rogers; vice-president, F. M. Connell; secretary-treasurer, J. A. M. Alley; directors: L. J. Lahay, George A. Young, J. A. M. Alley, all of Toronto. The head office is at 905 Bank of Hamilton Building, Toronto.

A 100-ft. vertical shaft has been sunk and 50 feet of cross-cutting done to prospect the "Ribble" vein, which has been traced on the surface for over 1,000 feet in a north-south direction, the dip being approximately 60° to the west. The cross-cut on the 100-ft. level passed through 25 feet of quartz and schist, some of which carried visible gold. The shaft is being continued to the 200-ft. level.

The plant comprises a 6-drill compressor, smithy, portable saw-mill and camp buildings.

George R. Rogers is manager, employing about 40 men.

Southern Section.

In the southern section, viz., in the vicinity of the West Shiningtree lake and eastwardly, there are several properties upon which little work is being done at present.

Buckingham.—(Claim 2461, Asquith township). An incline shaft 85 feet deep has been sunk on a 5-ft. quartz vein carrying considerable gold: the vein dips to the south at an angle of 60° from the horizontal. The plant consists of a locomotive boiler, a 2-drill compressor and a steam hoist.

Underground work was suspended in May, 1919.

Burke.—(Claims 3786 and 3767). Where Papoose creek enters Granite lake, Fawcett township, a shaft has been sunk 35 feet and a cross-cut driven 78 feet west to tap a large vein which occurs in the creek bottom.

Gosselin.—(W.D. 1151, 1156, 1157). Work consists of several hundred feet of trenching, numerous test pits and one inclined shaft 50 feet in depth on veins varying from 5 to 100 feet wide.

Holding.—(Claims 3508 and 3118, Asquith township). A shaft 47 feet deep has been sunk on the vein which dips to the southeast at an angle of 70° from the horizontal. A 10-ft. drift has been driven on the 30-ft. level. Some rich specimens came from this property. The shaft pump is operated by a gasoline engine.

Steep.—On the Steep property (Claim No. 2434) a shaft 100 feet deep and dipping to the south at an angle of 85° from the horizontal was sunk in 1914 on an east-west shear zone carrying visible gold. The broken rock is hoisted by dog teams.

Other properties in this section are: Kubick, Clark, Thompson, Speed, Gibson, Moore and McDonald, Moore, McRae and Maguire.

Miscellaneous Mines

Alexo Nickel.—The Alexo Nickel Company continued the shaft at their property to a further depth of 60 feet, drifting in a westerly direction for 80 feet on the 265-ft. level. During the year, 8,761 tons of ore were shipped to the Coniston Smelter of the Mond Nickel Company, the ore being taken from the stopes on the 120 and 75-ft. levels.

The officers of the company are: president, G. F. Hanning, Toronto; vice-president, Major E. F. Pullen; treasurer, H. N. Roberts; director, Capt. F. Pullen; manager, William Anderson.

An average of 19 men are employed.

Cedar Lake Nickel Prospect.—The National Mines, Limited, did some trenching and 400 feet of diamond-drilling from January to March, 1919, on mining claims T.R. 1623 and 3448. These claims are situated in the township of Strathy, Timagami Forest Reserve, about one mile south of Cedar lake. The deposits tested are said to contain chalcopyrite, pyrrhotite and a little pentlandite and gold. One of the claims is owned by Fallahay and Walters, and the other by Cook.

Premier-Langmuir (barite).—Work on the barite property of the Premier-Langmuir Mines, Limited, in Langmuir township, was continued during the year. The adit level is now in 170 feet. The shaft has been sunk to a depth of 130 feet, and 80 feet of drifting has been done at the 60-ft. level.

In the power house is a 125-h.p. boiler, locomotive-type, and a 150-h.p. engine.

A mill with a capacity of 30 tons daily was completed during the year, and milling operations started in October; about 100 tons of barite were treated.

The mine-run of ore, after crushing and screening, is jigged to remove waste; after drying it is ground in Stoud pulverizers to between 200 and 300-mesh.

The officers of the company are: president, J. A. McIntosh, 454 Markham St. Toronto; secretary-treasurer, J. B. Aikenhead, London, Ont. E. H. Low succeeded Charles W. Dalby as mine manager. An average of 20 men was employed during the year. The post-office address of the mine is Connaught.

Cobalt Silver Area

Following are notes of the working silver mines in the Cobalt area, where production was carried on under the stimulus of the prevailing high prices for silver—prices much higher than any previously realized.

Adanac.—Work on the Pan-Silver claims in southeast Coleman was continued by the Adanac Silver Mines, Limited, in 1918.

The shaft is, as before, 420 feet deep, with levels at 100, 200, 321 and 400 feet.

The east winze extends from 200 to 321 feet, and the west winze from 200 to 310 feet. On the 310-ft. winze level a cross-cut extends north from the south boundary of the Pan-Silver north claim to within about 250 feet of the Prince claim's south boundary. The work done in 1918 was confined to prospecting this level and stoping several ore shoots encountered.

The officers of the company are: president, R. A. Cartwright, Ridgeway, Pa.; vice-president, Alex. Fasken, Toronto; directors, E. M. Campbell, Ridgeway, Pa.; C. L. Sherrill, Buffalo, N.Y.; treasurer and managing director, M. R. Cartwright, Haileybury, Ont.

Aladdin.—The following information is taken from the annual report of the Aladdin Cobalt Company, Limited, for the period May 1st, 1918, to December 31st, 1918, and deals with operations at the Chambers-Ferland mine, Cobalt.

A total of 3,175 tons of ore averaging 18.3 ounces of silver per ton were milled at the Northern Customs concentrator and at the Dominion Reduction Company's mill. This yielded 50,812 ounces. While the average mill heads (18.3 ounces) were slightly lower than for the previous year (19.6 ounces), the recovery was 86.98 per cent., as compared with 82.57 per cent. in 1917.

Shipments to the smelters were as follows:

—	Tons	Gross Ounces	Gross Value
Concentrates	182.10	62,200.59	$63,924.92
Screenings	19.14	2,192.49	2,217.16
High grade	20.83	43,051.59	44,014.84
Cobalt ore	3.58	.....	868.12
Total	225.65	107,444.67	$111,025.04

Development work consisted of 52 feet of raising and 1,240 feet of cross-cutting and drifting. A cross-cut has been started on the 275-ft. level to tap a vein being mined on the Nipissing. On the 425-ft. level, cross-cut No. 42, running northeast towards the Genesee has been continued a distance of 885 feet from No. 4 shaft. This cross-cut is in conglomerate for the entire distance.

The officers of the company are: president, Capt. C. R. E. Jorgenson; directors, F. F. Fuller, H. B. Sedgwick, Dennis Herbert, all of London, England. The Canadian board is as follows: vice-president, Chas. A. Richardson; directors, R. T. Shillington, A. Ferland, all of Haileybury, Ont. Col. H. H. Johnson is consulting engineer, and John Matheson is mine foreman.

Beaver.—The Beaver Consolidated Mines, Limited, has an authorized capital of 2,000,000 shares of a par value of $1.00. The officers of the company are: F. L. Culver, president and general manager; F. C. Finkenstaedt, vice-president; H. E. Tremain, secretary-treasurer; the directors are F. C. Finkenstaedt, F. L. Culver, F. L. Lovelace, J. H. Black, Wm. Thos. Mason, Wm. E. Stevenson, H. E. Tremain, Howard L. Churchill. The head office is in the Lumsden Building, Toronto. The company's mines are at Cobalt, Kirkland lake and Elk lake.

During the year, 385,042 ounces of silver was produced from the Beaver mine, Cobalt. The twelfth annual report of the company states that, although no high-grade ore bodies were discovered during the year, yet large bodies of milling ore were opened up. Prevailing conditions made it advisable to cease operations on the lower levels of the mine till recently. A cross-cut is being driven on the 1,400-ft. level to prove up the vein discovered on the 1,600-ft. level which carried excellent values. A new campaign of development work in virgin ground on the 200-ft. level is planned.

The development work during the year was as follows: drifting, 498 feet; raising, 290 feet; cross-cutting, 653 feet. At the close of the company's year, February 28th, 1919, there were 19,763 tons of broken ore underground.

Buffalo.—The Buffalo Mines, Limited, operated continuously during 1918.

The following information is taken from the thirteenth annual report of the company and covers the period from May 1st, 1918, to April 30th, 1919.

Underground operations were as follows:

Level	Raising	Drifting	Stoping
1st	45 ft.	215 ft.	57,000 cu. ft.
2nd		245 ft.	186,000 cu. ft.
3rd		510 ft.	93,600 cu. ft.
Total	45 ft.	970 ft.	336,600 cu. ft.

During the year the tonnage broken was as follows: in raising, 190 tons; in drifting, 2,400 tons; and in stoping, 30,600 tons, a total of 33,190 tons broken, of which 1,000 tons was waste rock, used for filling. Of the balance, 28,572 tons was hoisted to the mill, and 3,618 tons added to reserves of broken ore in the mine.

During the year the mill treated 28,572 tons of ore from the mine, and 2,000 tons of ore from stock piles on surface, a total of 30,572 tons. The mill also treated 77,239 tons of sand tailings, making a total of 107,811 tons treated in the mill.

The total production of silver for the year, including ore and bullion on hand and at smelters, amounted to 625,786.06 ounces.

The officers of the company are: Charles L. Denison, New York, president; Robert W. Pomeroy, Buffalo, vice-president; Albert W. Johnston, New York, second vice-president; George C. Miller, Buffalo, secretary-treasurer; T. R. Jones, general superintendent.

Casey-Cobalt.—The new mill of the Casey-Cobalt Silver Mining Company, Limited, was completed in the early part of 1918 and operated continuously to the end of the year. Ore from the mine was treated up to October 31st, and afterwards from the ore dumps. The ore from underground was all taken from old stopes on the third level at No. 6 shaft: 4,065 tons were broken in stopes; 9,232 tons were treated in the mill.

On July 15th work was commenced on a shaft on the adjoining property to the west. This was a contract taken by the company to develop the property for the Harmak Mining Company. A hoist and shaft equipment were installed and

the shaft sunk to a depth of 375 feet. Drifting was done for 19 feet on the 100-ft. level. The air for drilling was supplied by the Casey-Cobalt compressor.

The officers of the company are: president, W. R. P. Parker; vice-president, J. P. Watson; secretary, W. W. Perry, all of Toronto. Head office, 1,514 Traders' Bank Building, Toronto. J. W. Shaw, New Liskeard, is manager, employing 50 men.

Casey-Mountain.—The Casey-Mountain Mining Company, Limited, operated from March to October 30th, 1918, on lot 6 in the second concession of Casey township. A winze was sunk on the 345-ft. level to a depth of 69 feet, about 65 feet from the shaft on the southwest drift. A hoist was installed at this winze. Ten men were employed.

The officers of the company are: Robt. G. Williamson, president, Toronto; W. A. Staples, secretary-treasurer, Toronto; R. G. Williamson, manager, Judge P.O., Ont. The head office is at 115 Stair Building, Toronto.

Coniagas.—For the year ending October 31st, 1918, the Coniagas Mines, Limited, produced from their mine at Cobalt 974,264 ounces of silver. The shipments of silver from this mine now total over 26,000,000 ounces. The average price realized for the silver sold during the year was 94.14 cents per ounce, as compared with 79.89 cents per ounce in 1917 and 63.11 cents in 1916.

The ore was mined and concentrated during the year at a net cost of 33.87 cents per ounce, as compared with 21.36 cents per ounce during the previous year. This cost includes all overhead expenses, royalties, other general expenses, and a War Profits tax estimated at $325,332.54, but excludes cost of smelting, refining, shipping and marketing, which amounts to 7.98 cents per ounce, as compared with 4.31 cents per ounce for the preceding year.

During the year dividends amounting to 7½ per cent., or $300,000 were paid.

The tonnage of ore milled was 68,597 tons, or an average of 3.38 tons per stamp per 24 hours. Concentrates shipped were: high-grade concentrates, 529.51 tons, averaging 1,164.10 ounces per ton, and low-grade slime concentrates, 866.77 tons, averaging 244.81 ounces per ton. Mill heads for the year averaged 15.94 ounces per ton as compared with 18.56 ounces for the previous year.

The cyanide plant, which had been operating on canvas table concentrates and primary mill slime, was shut down on November 20th, 1917, as the canvas tables were discarded when the Callow flotation process was adopted. The Callow flotation plant was increased by another unit and treated all tailings from the concentrating mill. The assay of final tailing was 1.75 ounces per ton compared with 2.98 ounces for the previous year.

The underground work done to date is as follows:

—	Total to Oct. 31, 1917	Total to Oct. 31, 1918	Work done during 1917–1918
Shaft-sinking, feet	879	879	.....
Winze-sinking, feet	632	721	89
Crosscutting, feet	10,295	10,678	383
Drifting, feet	18,834	19,909	1,075
Raising, feet	1,396	1,538	142
Total	32,036	33,725	1,689

Assuming a continuation of present market conditions, it is estimated that a three years' supply of ore is still available.

The officers of the company are: president and general manager, Col. R. W. Leonard, St. Catharines; vice-president, Alex. Longwell, Toronto; directors, Major R. P. Rogers, France; F. J. Bishop, Brantford; W. D. Woodruff and R. L. Peek, both of St. Catharines; director and superintendent, F. D. Reid, Cobalt; secretary-treasurer, J. J. Mackan, St. Catharines.

An average of 108 men (calculating on a six-day per week basis) was employed under superintendent F. D. Reid.

Crown Reserve.—The following information regarding operations at Cobalt is abstracted from the annual report of the Crown Reserve Mining Company, Limited, for the year ending December 31st, 1918:

Total development in 1918 ..... 2,560 feet
Total ore production in 1918 gave a net return of $198,011.35

In the autumn a promising vein was cut in the eastern part of the property. By the end of the year, 150 feet of drifting had shown the vein to be two to five inches wide, with an average silver content of over 2,500 ounces per ton. Stoping has been begun on this ore body.

The Silver Leaf claim, which is being worked by the Crown Reserve under lease, yielded during 1918 one ton of high-grade and 2,216 tons of milling ore.

The officers of the company are: president and managing director, John W. Carson; 1st vice-president, Wm. I. Gear; 2nd vice-president, James G. Ross; directors, the above-mentioned and Chas. C. Dickson, Z. Gallagher, A. G. Gardner, F. S. Meighen, R. W. Reford, J. W. Ross, Chas. A. Smart; secretary and treasurer, James Cooper; manager, H. J. Stewart, Cobalt; consulting engineer, S. W. Cohen. Offices, 605 Dominion Express Bldg., 145 St. James Street, Montreal, and 18 Toronto Street, Toronto.

Dickson Creek.—The Dickson Creek Mining Company, Limited, owns lots 9 and 10, concession V, Bucke township, and is prospecting the northeast quarter of the north half of lot 9. Here a shaft has been sunk at 78 degrees for 175 feet on a vein which strikes N. 35 degrees E. and dips to the southeast. A level has been opened at 150 feet, and on March 21st, 1919, 69 feet of drifting and cross-cutting had been done to the northeast and 62 feet to the southwest. Cross-cutting was still in progress, the drilling being done by hand. All the work has been done in conglomerate. The hoist is a 6-inch by 8-inch Jenckes, driven by a 22-h.p. motor. Five men are employed, with H. Hollands-Hurst, Box 479, Haileybury, Ont., in charge.

The officers of the company are: chairman, W. F. H. Blandford; directors, Walter Eveling, Phillip Hurst and Anthony E. Smith; all of London, England.

Dominion.—The Dominion Reduction Company, Limited, continued stoping from No. 3 shaft of the Dominion mine (better known as the "Nova Scotia") until August, 1918, when work was suspended. H. R. Bischoff, Cobalt, was in charge of the work.

Dominion Reduction Mill.—The custom mill of the Dominion Reduction Company, Limited, at Cobalt was operated during all of 1918. The ore treated came from the Kerr Lake and Crown Reserve mines, with a little from the Green-Meehan, Reliance, Cobalt Comet, Silver Queen and Chambers-Ferland mines. Some tailings from the old Nipissing Reduction Company mill were also treated. About sixty men were employed.

The officers are: president, D. M. Steindler, New York; vice-president, Mortimer Davis, Montreal; secretary-treasurer, H. M. Thompson, New York; director, L. L. Steindler, Cobalt; manager, G. W. Perram, Cobalt; mill superintendent, Albert Wood, Cobalt.

Foster.—L. Campbell, of Montreal, and W. H. Fairburn, of Toronto, are now operating this property under lease. Work was at first confined to shipping mill ore from the surface dumps, and about 2,500 tons were treated by the Northern Customs Concentrator at North Cobalt.

An examination of some of the old workings was so encouraging that underground work was commenced with good results. Two ore shoots were disclosed, one of which was exceptionally rich.

H. G. Carmichael is manager, employing about 20 men.

Green-Meehan.—Edwards and Wright, Limited, worked the Green-Meehan mine, near North Cobalt, from February, 1918, until February, 1919, when the work was stopped until spring, owing to shortage of water for the boilers. The main shaft is 200 feet deep, with levels at 100 and 200 feet. A winze extends from the 200-ft. to the 300-ft. level. The work done in 1918 consisted of about 250 feet of drifting and cross-cutting on the 245-ft. winze level, with some stoping above the level.

John Edwards, North Cobalt, is manager, and Ewen J. McMillan, mine foreman.

Genesee.—The Genesee Mining Company, Limited, continued work on the southwest quarter of the south half of lot 9, concession I, township of Bucke, until February 28th, 1919. On that date the prospecting done underground consisted of the following: The vertical shaft was 572 feet deep, with levels at 350, 450, 495 and 550 feet. On the 495-ft. level 1,374 feet of cross-cutting and drifting and 78 feet of raising had been completed. In doing this work, four veins are reported to have been cut, two of which gave encouraging assays. On each of the other levels 30 feet of cross-cutting was done on each side of the shaft.

The manager of the company stated that in sinking the shaft the following rocks were passed through: from surface to 526 feet, slate greywacké and conglomerate; 526 to 530, Timiskaming conglomerate; 530 to 560, lamprophyre; 560 to 572, Timiskaming conglomerate.

The officers of the company are: president, W. H. Wray; vice-president, C. H. Crandall; secretary-treasurer, Alex. Russell; managing director, A. H. Dewey; directors, C. F. Van Zandt, R. H. Gorsline, G. H. Welch, J. C. Comerford, all of Rochester, N.Y.; manager, Leonard F. Steenman, Cobalt.

Gifford.—The Gifford Cobalt Silver Mining Company resumed mining operations early in the year, employing from six to eight men continuously. Three hundred feet of cross-cutting and 108 feet of drifting was done on the bottom level. Several short drifts were put in on veins cut by the cross-cuts.

Frank B. Mosure, of Toronto, was manager, and John Bedford mine foreman.

Hargrave.—The Hargrave Silver Mines, Limited, operated during 1918 from January 1st to September 15th. The underground work during that period consisted in: drifting, 253 feet; cross-cutting, 38 feet; raising, 279 feet; sinking, 27 feet. Ore shipments amounted to 20.8 tons, yielding 15,694.01 oz. of silver, of a gross value of $13,343.36.

The officers of the company are: president, James A. Aitchison; secretary-treasurer, Geo. H. Sedgewick; manager, J. T. Shaw; head office, Excelsior Life Building, Toronto.

Hudson Bay.—The Hudson Bay Mines, Limited, continued to work their No. 1 mine at Cobalt during 1918, practically all the ore being obtained from the old workings.

The following summary of the operations is abstracted from the annual report and covers the fiscal year ending August 31st, 1918:

Development work done amounted to 546 feet. The stamp mill crushed 20,540 tons of ore, from which the recovery was 140,732 ounces of silver, or 72.02 per cent. High-grade ore bagged contained 6,769 ounces additional. The ore milled averaged 9.5 ounces per ton, and the tailing loss was 2.38 ounces per ton. The net smelter value of the ore and concentrates was $124,838.93. Silver was produced at a cost of 62.57 cents per ounce, including selling costs, and an average price of 86.33 cents per ounce of silver was received for it. The profit on the year's work amounted to $32,402.47.

Ore reserves on Aug. 31st, 1918, were estimated to amount to 12,224 tons containing 60,149 ounces of silver.

The officials of the company are: president, F. L. Bapst; vice-president, A. A. McKelvie; secretary-treasurer, F. L. Hutchinson, New Liskeard, Ont.; general manager, C. L. Sherrill; directors, H. P. Burgard; T. McCamus; W. H. Kinch. A. H. Brown was superintendent until December, 1918, when he resigned.

Kerr Lake.—By a reorganization in November, 1917, the Kerr Lake Mining Company of New York was absorbed by Kerr Lake Mines, Limited, of Ontario. The capitalization remains as before, viz., $3,000,000 divided into 600,000 shares of $5.00 par value.

The following particulars are taken from the annual report of the combined companies for the year ending August 31st, 1918:

The gross production from all ores for the year amounted to 2,582,993 ounces of silver, 199,331 pounds of cobalt and 545 pounds of mercury. These figures include 54,523 ounces of silver from low-grade ore milled by the Dominion Reduction Company at Cobalt.

During the year, 3,088 feet of development work was done in the more favourable portions of the property. This work failed to encounter new veins of importance, although extensions of ore shoots containing commercial values in known

veins were exposed. The development work consisted of 1,091 feet of drifting, 968 feet of cross-cutting, 989 feet of raising and 40 feet of sinking. The total development to date amounts to 54,539 feet.

Material hoisted amounted to 48,542 tons at a mining cost of $5.11 per ton. This consisted of 5,413 tons of waste and 13,129 tons of ore. The ore yielded 1,017 tons of sacking ore, 27,835 tons of mill ore and 14,277 tons of waste from the bumping table. Silver was produced at a total cost of 24.70 cents per ounce. This cost was made up as follows: mining and development, 9.60 cents; shipment and treatment, 14.20 cents; administration and general expense, 00.94 cents.

Ore reserves were estimated on September 1st, 1918, to consist of 34,730 tons, containing 1,637,300 ounces of silver.

The officers of the company are: president, Adolph Lewisohn; vice-president, S. A. Lewisohn; secretary and treasurer, E. H. Westlake; directors, the above-mentioned and J. H. Susmann, J. Parke Channing, S. S. Rosenstamm, D. M. Steindler, J. J. Steindler and W. B. Joyce; mine manager, H. A. Kee. The offices are at Cobalt, Ont., and 61 Broadway, New York.

La Rose.—La Rose Mines, Limited, has an authorized capital of 1,500,000 shares of a par value of $1.00. The officers of the company are: D. Lorne McGibbon, president; Shirley Ogilvie, vice-president; Stephen J. LeHuray, secretary and treasurer; G. C. Bateman, general manager. The directors are: D. Lorne McGibbon, Edwin Hanson, Victor E. Mitchell, Shirley Ogilvie, W. A. Black and S. J. LeHuray, of Montreal; W. M. Dobell, Quebec; E. W. Nesbitt, Woodstock; David Fasken, Toronto; the head office of the company is at 260 St. James St., Montreal.

The following information is taken from the twelfth annual report of the company:

The silver produced during the year ending December 31st, 1918, amounted to 288,556 ounces, the net value of which was $268,524.76. The net profit on production was $45,544.21. The average price received for silver was 99.83 cents, and the cost of production was 87.17 cents. A dividend of 2 per cent. was paid on April 20th. The total production of the mine to the end of 1918 was 24,484,052 ounces.

The development during the year is shown in the following table:

SUMMARY OF DEVELOPMENT WORK DONE DURING 1918.

Property	Shafts	Drifts	Cross-cuts	Raises	Stopes	Stations
	ft.	ft.	ft.	ft	cu. yds.	cu. yds.
La Rose	14	61.5	295	67	1,442	.....
Lawson	.....	.....	.....	.....	65	.....
Princess	.....	.....	86	12	45	.....
Violet	116	632.	601.5	82	121	453
Total	130	693.5	982.5	161	1,673	453

The tonnage of mill rock supplied by each mine was:

La Rose	12,485 tons
Lawson	13,280 "
Princess	8,811 "
Violet	2,035 "
Total	36,611 tons

At the La Rose mine 438 feet of development work was done, but no new ore was discovered. The output of the mine was obtained from veins 6-A and 8-A, discovered late in 1917, and from the cleaning up of old stopes and pillars in the main vein and veins Nos. 3, 9, 10 and 13. A small surface dump adjacent to the main shaft was milled, and this completed the exhaustion of the surface dumps on this claim.

The concentrator treated 36,611 tons of ore, the average grade of which was 7.71 ounces per ton, as compared with 8.75 ounces per ton in 1917. The concentrates amounted to 842.4 tons, averaging 267.88 ounces per ton, or an aggregate of 225,665.21 ounces.

The total output of silver, from concentrates, high-grade ore and cobalt ore, was 288,556 ounces. Payment was also received for 10 tons of cobalt, contained in the shipments.

No underground work was done at the Lawson mine during the year. The dumps supplied 13,280 tons of ore for the concentrator, and there is still a limited tonnage remaining. Thirty-nine tons of low-silver high-cobalt ore was also produced.

No work was done on the Fisher-Eplett and University properties.

An inspection of old workings on the first level of the Princess mine disclosed some ore in the walls of the stopes and in pillars. This ore is being broken, and the results have been sufficiently satisfactory to justify further investigation. Preparations are being made to unwater the second level for this purpose.

There was shipped to the concentrator 8,810 tons of ore from the surface dumps, but these have now been exhausted.

From the 410-ft. level of the Violet a cross-cut was driven south and intercepted several veins, carrying low values in silver. Drifting was begun, and a short distance to the east, at the diabase-Keewatin contact, high-grade ore was encountered. It was, however, limited in quantity, and although other small pockets were encountered in this drift, nothing of much value was found.

A winze, 70 feet deep, was sunk from the level, and drifting started at a point 60 feet below the level. The vein in the drift carries some silver, and the indications are favourable.

A new level was opened at a depth of 330 feet in the shaft and cross-cuts driven north and south. In the south cross-cut the same vein was cut as on the 410-ft. level. In the drifts on the vein a shoot of ore 60 feet long has been proven. As is usually the case with ore near the diabase-Keewatin contact, the distribution of silver is very erratic, but there is a certain amount of high-grade, and the adjoining rock carries milling values. The north cross-cut was driven for the purpose of exploring an area of conglomerate believed to lie under the diabase, and was found to be at the contact between this conglomerate and the underlying Keewatin. One hundred and fifty feet from the shaft a vein was cut in this cross-cut.

In the drifts and raises, on this vein, a small quantity of high-grade was encountered, but it is believed that the upper portions of the conglomerate offer the best possibilities. The indications point to a thickness of over 100 feet of conglomerate, in which only a small amount of work has yet been done.

There was shipped to the concentrator 2,034 tons of mine ore, and the production of silver from mill ore and high-grade ore was 30,000 ounces.

The company's engineers examined a number of promising properties during the year and took an option on a silver prospect in the Kamloops district, B.C. This option was allowed to lapse early in 1919.

McKinley-Darragh.—The McKinley-Darragh-Savage Mines of Cobalt, Limited, has an authorized capital of 2,500,000 shares of a par value of $1.00, of which 2,247,692 shares have been issued. The officers and directors of the company are: J. R. L. Starr, Toronto, president; Thos. W. Finucane, Rochester, vice-president; Harper Sibley, Rochester, treasurer; A. G. Beckwith, Rochester, assistant-treasurer; J. H. Spence, Toronto, secretary; Hiram W. Sibley, James S. Watson, G. L. Thompson, T. R. Finucane, all of Rochester; T. R. Finucane, general manager. The head office is in the Trusts and Guarantee Building, Toronto.

During the year, 904,543 ounces of silver were recovered, bringing the total recovery of this company to 18,227,645 ounces of silver.

The estimated ore reserves on January 1, 1919, are given as 852,754 ounces of silver. This does not include the large tonnage of tailings from previous operations. A mill has been built for the re-treatment of these tailings; its operation is confined to the summer months.

The development work amounted to over 8,200 feet, as follows: 3,433 feet of cross-cutting; 4,370 feet of drifting; 441 feet of raising and 18 feet of sinking; 34,255 tons of ore were broken in the stopes.

The mill ran 97.2 per cent. of the possible running time, treating 67,020 tons of ore of an average assay of 12.923 ounces per ton, and recovering 755,502 ounces of silver, or an extraction of 87.23 per cent.

Dividends Nos. 38, 39 and 40, each for $67,430.76, were paid during 1918, and dividend No. 41, for the same amount, was declared on November 18th for payment on January 1st, 1919.

Mining Corporation of Canada.—The Mining Corporation of Canada, Limited, owns the Cobalt Townsite, Cobalt Lake, City of Cobalt, Townsite Extension, and Little Nipissing mines. The Cobalt Reduction Company is also controlled by the Corporation, which is capitalized at 1,660,050 shares of $5.00 each, all issued. The officers and directors are: Henry M. Pellatt, president; J. P. Watson, first vice-president; W. R. P. Parker, second vice-president; G. M. Clark, J. G. Watson, D'Arcy Weatherbe, R. E. G. Van Cutsem; D'Arcy Weatherbe, consulting engineer; M. F. Fairlie, resident manager. The head office is at 1512-1520 Traders' Bank Building, Toronto.

The following information is taken from the fifth annual report of the company:

The production for the year was 1,708,252.41 ounces of silver, and there is in ore reserves 1,240,550 ounces. In addition, the re-treatment of tailings is expected to give a large production of silver.

The net profits, after allowing for depreciation and special expenditure, amounted to $925,760.38. Four dividends, one of $415,012.50 and three of $311,259.37 each, were paid.

UNDERGROUND WORK

	Lineal feet of working place advanced					Cubic feet Stoping
	Driven	Cross-cut	Sunk	Raised	Total	
Ore Extraction	.....	.....	.....	.....	.....	251,199
Development	173	.....	.....	34	207	.....
Exploration	.....	6,002	10	321	6,333	.....
Total	173	6,002	10	355	6,540	251,199

The total footage of drifts, cross-cuts, raises, winzes and shafts in the workings of the Mining Corporation amounted to an aggregate of over 22 miles at the end of 1918.

Of the total ore tonnage hoisted from the mines 125.9 tons of high-grade were treated in the high-grade plant of the Cobalt Reduction Company, and 42,355.88 tons were concentrated. In addition, 17,632.72 tons of tailings were treated by the Cobalt Reduction Company.

The last-named company's concentrating mill ran 93.18 per cent. of possible running time. The number of stamps dropping at January 2nd was 70; this was decreased to 40 on February 5th, increased to 45 on April 12th, and decreased to 25 on July 2nd. The cyanide plant operated continuously throughout the year.

No diamond-drilling was done during the year, and the programme of exploration at the Cobalt Lake mine being completed, this mine closed down at the end of of 1918. Further exploration is to be carried on at the City mine, but it is not intended to do any further work of this nature at the Townsite mine.

Development on the Thompson claim at North Cobalt is still being carried on, as well as on the Nels Nelson in the Casey area.

After six months' work on the Raty gold claim in Rickard township the option was allowed to lapse.

The Noyes fluorspar mine at Madoc was acquired, and a separate company formed called the Canadian Industrial Minerals, Limited.

The Mining Corporation did 467 feet of cross-cutting in the conglomerate on the 300-ft. level of the Alexandra claim, Coleman township. This work was done between November, 1917, and May 1, 1918, under an option to purchase.

In December, 1918, the Corporation also began work on the Waldman claim in Coleman township which lies immediately west of the Savage mine. Cross-cutting to the extent of 1,810 ft. was done in conglomerate on the 100-ft. level of the Waldman No. 3 shaft. Most of this work was done in the north-eastern part of the claim. This shaft is 105 feet deep, but no lateral work had previously been done from it. The option was subsequently abandoned.

National.—The National Mines, Limited, did no work in the King Edward mine in 1918, but treated King Edward and Silver Cliff tailings from April 15th to November 1st, 1918.

The officers of the company are: president, H. E. Jackman, Rochester, N.Y.; secretary-treasurer, Ernest C. Whitbeck, 17 Ellwood Building, Rochester, N.Y.

Nipissing.—The Nipissing Mines Company, Limited, has an authorized and issued capital of 1,200,000 shares of a par value of $5.00. The officers of the company are: E. P. Earle, president; Alexander Fasken, secretary; P. E. Pfeiffer, treasurer. The directors are: W. H. Brouse, John H. Black and David Fasken, of Toronto; Richard T. Greene, E. P. Earle, August Heckscher and R. B. Watson, of New York. The head and corporate office is in the Excelsior Life Building, Toronto, and the New York office is at 165 Broadway.

The operating Company is the Nipissing Mining Company, Limited, with an authorized and issued capital of 2,500 shares of a par value of $100. The officers are: David Fasken, president; E. P. Earle, vice-president; Alexander Fasken, secretary; P. C. Pfeiffer, treasurer. The directors are: John H. Black and David Fasken, of Toronto; E. P. Earle, Richard T. Greene and R. B. Watson, of New York. The operating officials are: R. B. Watson, general manager; Hugh Park, manager; James Johnston, mill manager; James J. Denny, manager research department. The head office is at the Excelsior Life Building, Toronto.

The following information is taken from the fourteenth annual report of the company:

SUMMARY OF UNDERGROUND WORK, 1918

Shaft No.	Drifting	Cross-cutting	Raising	Sinking	Total	Stoping
	ft.	ft.	ft.	ft.	ft.	cu. yds.
63	81.0	1,274.5	67.5	.....	1,423.0	646
73	1,153.5	3,850.5	279.5	81.0	5,364.5	13,525
80	.....	.....	.....	.....	.....	129
96	154.5	711.5	71.0	.....	937.0	832
128	.....	.....	.....	90.5	90.5	.....
Total	1,389.0	5,836.5	418.0	171.5	7,815.0	15,132

Diamond-drilling, 4,077.6 feet, all surface, on locations R.L. 401, 402, 407.

DEVELOPMENT.

The total advance in 89 faces worked during the year amounted to 7,815 feet. This is the smallest advance made in recent years, and was due to the fact that no large veins were discovered, and the few small veins encountered were opened up with comparatively little drifting. On the other hand, a large amount of exploration work was done, cross-cutting likely territory in search of new ore. This comprised fully 85 per cent. of the total footage driven.

Most of this work was barren of favourable results, although two new veins, 73-541 and 102-100, were found in new territory and may prove of some importance after development. In the vicinity of 98 shaft a number of small veins opened up well and furnished considerable new ore.

The usual amount of stoping was done, most of the veins fully coming up to expectations. The high price of silver has enabled a much lower grade of ore to be treated, so that a considerable additional tonnage was obtained by slabbing off the sides of old stopes, and new stopes were carried wider than heretofore.

This inclusion of low-grade rock sent to the mill resulted in a drop of about 7 ounces per ton in the mill heads.

Shaft 63 was pumped out early in the year, and work was resumed on the Little Silver veins. Much new ore was taken from the old stope near the surface, by breaking down the walls.

Over 700 feet of cross-cutting was done from the workings connected with this shaft in exploring the ground to the east and north: this work will be continued, as it is all in likely conglomerate territory.

The new vein 544 in shaft 73 was cut on the fifth level near vein 490. A winze has been sunk on it to a depth of 145 feet, where the Keewatin contact was reached. The vein is two inches wide and strong throughout, but the values are not high except in spots. It is probable that pockets of good ore will be found on further development.

The best new vein found was 4,067, near 98 shaft: the ore shoot on the fourth level is 125 feet long.

Although this shaft produced 62,000 tons during the year, or over three-quarters of all the ore going to the mill, the reserves of mill rock were only reduced 8,000 tons. This is largely due to the extension of the stopes on vein 490 beyond previous estimates: this is now the best vein on the property and contains one-third of the total ore reserves. The vein itself is wide, but assays only about 1,000 ounces per ton. The country rock is good, the average width of the stopes being over ten feet.

In tunnel 96 stoping was completed on veins 96 and 102, and all the broken ore was sent to the mill. A large amount of exploration was done from these workings in the territory to the south, and between the railroad and Cart lake.

Two new veins were cut showing fair values: one of them gives promise of producing at greater depth.

Shaft 128 is located on the east shore of Cobalt lake, some distance north of shaft 81. At this point there is a basin of conglomerate 125 feet deep, around the edges of which a number of veins have been opened up on the surface. It is hoped that some of these veins will make ore in the conglomerate. The shaft has been sunk to the contact, and cross-cutting has been begun.

No work was done in the workings of shaft 64 during the year. Over 4,000 feet of diamond-drilling was completed, most of it on R.L. 102, north of the O'Brien mine. Nothing of interest was found.

Ore Reserves

Reserves of developed and partly developed ore at December 31st, 1918, are estimated as follows:—

Shaft No.	High Grade Ore		Mill Ore		
	Tons	Ounces	Tons	Assay, Oz.	Ounces
63	172	423,300	6,811	25	170,275
64	159	121,653	3,710	20	74,200
73	1,080	1,621,690	38,475	20	769,500
80	73	148,700	2,392	25	59,800
96	.....	.....	149	25	3,725
490	1,304	1,157,841	34,054	20	681,080
	2,788	3,473,184	85,591	20.5	1,758,580
Dumps	.....	.....	35,458	21.8	773,371
			121,049	20.9	2,531,951

The following is a summary of the above table:—

—	Tons	Assay, Oz.	Ounces
High Grade Ore	2,788	1245.	3,473,184
Mill Ore	121,049	20.9	2,531,951
Total	123,837	48.5	6,005,135

High-Grade Mill.

The process which has heretofore been used in the treatment of the high-grade ores and which gave satisfactory results for seven years, is an amalgamation process, using a large quantity of mercury. The price of mercury before the war was $33 to $39 per flask of 75 lbs. Demand for war purposes raised the price to $130 per flask.

This so increased the cost of the process that it was decided to discontinue amalgamation and rely on cyaniding alone, after giving the ore a preliminary treatment with bleaching powder in the tube mill.

The necessry apparatus for this process was installed in the low-grade mill at a small cost, and in August last the old high-grade mill was shut down. The new process is working smoothly, and will be used as long as it shows a saving over amalgamation.

The two plants treated during the year 430 tons of custom ore and bullion containing 1,668,350 ounces; 983 tons of Nipissing ore assaying 1,713 ounces per ton, and 513 tons of Nipissing concentrate of an assay value of 1.609 ounces per ton, making a total of 1,926 tons containing 4,178,510 ounces.

Of this the old high-grade mill treated 1,102 tons, containing 2,733,467 ounces, and the new plant 824 tons, containing 1,445,043 ounces.

The refinery also handled precipitate from the low-grade mill containing 846,737 ounces.

The bullion shipped averaged 998 fine and amounted to 190 tons containing 5,332,881 ounces.

Residue shipments were 2,157 tons, assaying 9.03 per cent. cobalt. The demand for this material is good, at much higher prices than ever received before.

Low-Grade Mill.

—	Tons	Assay	Ounces
Ore treated	80,274	23.81	1,911,198
By-products treated	43	.....	116,066
	80,317	25.24	2,027,264
Recovered from the above:			
Precipitate	35	24,166	846,737
Coarse Concentrate	544	1,611	876,471
Fine Concentrate	92	800	73,715
Total Recovery	.....	.....	1,796,923

Average tailing, 2.84 ounces. Recovery, 87.95 per cent.

In February, 1918, thirteen roughing tables were installed over the tube mills, and in April, sixteen fine sand tables were added.

The ore is crushed by stamps in cyanide solution and goes to the roughing tables without classification. The tailing is classified; the sand is re-crushed in tube mills; the overflow from the classifier goes to the fine sand tables. The tube mill discharge is returned to the classifier; the tailing from the fine sand tables is cyanided.

By this method 48 per cent. of the silver in the ore is recovered in the form of concentrate, 40 per cent. as precipitate from the cyanide plant, and 12 per cent. goes to waste.

The concentrate is re-treated with the high-grade ore in the high grade mill and the precipitate from both treatments is sent to the refinery where it is converted into bullion.

This process gives a better extraction and at less cost than can be obtained by cyanide alone on the quality of ore now being produced; due consideration must be given for the value of the cobalt in the concentrate.

Forty stamps ran 323 days, or 88.49 per cent. of the possible running time; they crushed 248 tons per day or 6.98 tons per stamp per day.

SHIPMENTS IN 1918

—	Dry Tons	Fine Ounces Silver	Net Value	Per cent. of Total Net Value
			$ c.	
Silver Bullion	190.1065	5,532,880.87	5,485,427 24	131.67
Residue and Concentrates	2,292.6948	252,858.54	352,099 20	8.45
Total Shipments	2,482.8013	5,785,739.41	5,837,526 44	140.12
Less Custom Ore included in above	406.9095	1,668,350.23	1,671,462 17	40.12
Shipments of Nipissing Product	2,075.8918	4,117,389.18	4,166,064 27	100.00

PRODUCTION IN 1918

—	Ounces Silver	Gross Value	Net Value
		$ c.	$ c.
Shipments in 1918	4,117,389.18	4,239,173 85	4,166,064 27
On hand at Mine Dec. 31, 1918	806,161.22	838,780 92	826,315 25
	4,923,550.40	5,077,954 77	4,992,379 52
On hand at Mine, Dec. 31, 1917	1,222,051.88	1,038,744 08	1,020,413 30
	3,701,498.52	4,039,210 69	3,971,966 22
Difference between estimated shipments in 1917 and actual returns	−82.14	1,235 41	1,230 41
Nipissing Production	3,701,416.38	4,040,446 10	3,973,196 63

Dividends amounting to $1,800,000 were paid during 1918, and a dividend of $600,000 declared in December, 1918, bringing the total amount paid in dividends to $19,400,000.

Northern Customs.—The Northern Customs Concentrators, Limited, at Mileage 104, T. & N. O. railway, operated continuously during the year on ore from the following mines:

La Rose	36,324 tons;	silver content,	280,782 oz.
Right of Way	5,543 "	"	33,329 "
Aladdin Cobalt	7,557 "	"	122,512 "
Edwards & Wright	3,708 "	"	50,941 "
Campbell lease on Foster mine	2,587 "	"	17,639 "

The officers of the company are: president, A. J. Young; vice-president, C. J. Booth; general manager, J. F. Bourne, Cobalt; directors, C. W. Haentschel, H. J. Jessop; superintendent, C. J. B. Armstrong; secretary, L. O. Walton, 720 Excelsior Life Building, Toronto.

O'Brien.—This mine is now operated by M. J. O'Brien, Limited.

The work done during the year was as follows:

Drifting	4,385 ft.
Cross-cutting	2,570 ft.
Raising	75 ft.
Sinking	256 ft.
Stoping	36,658 tons.
Tonnage hoisted	73,800 tons.

It may be noted that of the ore broken 3,484 tons came from the conglomerate, 18,980 tons were in the diabase, and 26,800 tons were mined in the Keewatin below the diabase sill.

The officers of the company are: president, M. J. O'Brien, Renfrew; vice-president, J. A. O'Brien, Renfrew; manager, J. G. Dickenson, Cobalt; mining engineer, Angus Campbell; mine secretary, A. E. McKee.

Ophir.—The Ophir-Cobalt Silver Mines, Limited, of which company W. Murray Alexander, 608 Lumsden Building, Toronto, is president, continued to prospect their claim in 1918 until August 26th, when the Mining Corporation of Canada began work under option.

The Ophir company did 533 feet of cross-cutting near the Keewatin-diabase contact on the Ophir claim from the 408-ft. level of the People's Mining Company's shaft. A winze was sunk to a depth of 10 feet below this level near the centre of the claim and a little south of the Ophir No. 1 shaft.

The Mining Corporation continued the work until December 15, 1918, and sank the above mentioned winze to a depth of 140 feet, when the diabase contact was encountered. At the bottom of this winze, 18 feet of cross-cutting was done to the west when the Keewatin was entered. Fifteen feet of drifting to the north was also done from this cross-cut.

The Nipissing Mining Company, Limited, took over the claim under an option, and began to cross-cut the Keewatin above the contact on January 18, 1919.

People's.—The People's Silver Mines, Limited, did no work in 1918 on their claim in southeast Coleman, but the People's shaft was used in prospecting the adjoining claim of the Ophir Cobalt Mines, Limited.

Penn-Canadian.—The Penn-Canadian Mines, Limited, worked continuously in 1918, but did little development work; 29,910 tons of ore were treated in the mill.

The officers are: president, Wm. J. Haines, Philadelphia, Pa.; secretary-treasurer, R. B. Haines, Jr., Philadelphia, Pa.; directors, Spencer D. Wright, Philadelphia, Pa.; Jansen D. Haines, Des Moines, Ia.; E. C. P. Laidlaw, New York; manager, B. Neilly, Cobalt. The mine foreman is R. Sandoe, and the mill foreman is W. Kelly. The head office is at 1011 Chestnut St., Philadelphia, Pa.

Peterson Lake.—The Peterson Lake Silver Cobalt Mining Company, Limited, did no mining in 1918, but ran the Seneca-Superior mill from June to November, treating tailings from the latter property. The mill was started again on May 1st, 1919.

The officers of the company are: president, W. M. Lamport, Toronto; vice-president, S. G. Forst, Toronto; directors, Irving L. Ernst, New York; Max B. Borg, New York; Charles M. Nickel, Toronto; secretary-treasurer, P. M. Goff, Toronto; manager, Charles A. Filteau, Cobalt, Ont. The head office is at 909 Excelsior Life Building, Toronto.

Provincial.—The Cobalt Provincial Mining Company, Limited, worked the Provincial mine during eight months of 1918. Development work was confined

to 350 feet of cross-cutting on the 175-ft. level. The mill ran only two weeks during the year. One Callow flotation unit has been added. Shipments consisted of seven tons of concentrates and two tons of high-grade ore.

The officers of the company are: president, F. G. Logan, Chicago; vice-president and manager, John Reddington, Cobalt; secretary, C. L. Painter, St. Louis, Mo.; head office, 121 Chamber of Commerce, St. Louis, Mo.

Reliance.—On the Reliance claim, situated near the Nova Scotia mine and owned by Moorehead and Tough, the Reliance Leasing Company has been working under lease since November, 1918. The main shaft is 50 feet deep. About 150 feet east of it a second shaft, 40 feet deep, was sunk to the 50-ft. level and continued as a winze to a depth of 112 feet. When inspected, on May 29th, 1919, the two shafts were connected on the 50-ft. level and a total of 250 feet of drifting and cross-cutting had been done to the east of the main shaft and 200 feet to the west of the same. Some ore had been stoped above and below this level to the east of the main shaft. On the 112-ft. winze-level drifts extended 20 feet east and 10 feet west.

John T. Shaw, Cobalt, was in charge of the work, employing 8 men.

Silver Queen.—This property was under lease to George A. Irwin, Cobalt, during 1918.

From the surface dumps 450 tons of milling ore was shipped to the Dominion Reduction Company. No ore was hoisted from the underground workings.

Right-of-Way.—The following particulars are extracted from the annual report of the Right-of-Way Mines, Limited, covering the year ending December 31, 1918:

Work was carried on continuously during the year at No. 2 shaft, situated near the north end of Cobalt lake. Development work done consisted of: winze-sinking, 54 feet; raising, 96 feet; drifting, 431 feet; cross-cutting, 60 feet. The net value of the ore produced during the year was $42,993.55. This amount was calculated as follows:

	Dry weight pounds	Silver contents ounces	Gross Value	Net Value
			$ c.	$ c.
Shipments—				
High grade and concentrates	305,008	45,733.25	45,901 19	38,798 20
Metallics	613.4	3,989.97	3,823 20	3,535 35
Ore on hand, Dec. 31, 1918	21,000	2,100.00	2,100 00	2,100 00
	326,621.4	51,823.22	51,824 39	44,433 55
Less ore on hand, Dec. 31, 1917	4,000	1,800.00	1,440 00	1,440 00
Production, 1918	322,621.4	50,023.22	50,384 39	42,993 55

The officers of the company are: president, C. Jackson Booth; vice-president, A. E. Larmonth; secretary, Jas. Cunningham; all of Ottawa; manager, D. H. Angus, Cobalt. The head office of the company is in Central Chambers, 46 Elgin Street, Ottawa, Ont.

Temiskaming.—The Temiskaming Mining Company, Limited, has an authorized and issued capital of 2,500,000 shares of a par value of $1.00 each. The directors are: president, J. P. Bickell, Toronto; vice-president, W. J. Sheppard, Waubashene, Ont.; Geo. E. Drummond, Montreal; W. Linton, Toronto; George N. Miller, New York; H. D. Symmes, Niagara Falls, Ont.; J. B. Tudhope, Orillia, Ont. M. P. Van der Voort is secretary, and P. W. Cashman, treasurer. The head office is in the Standard Bank Building, Toronto, and the mine office is at Cobalt, Ont.

The mill was shut down on May 10th, 1918, and was not started again until November 18th, 1918. From January 1st, 1918, to June 30th, 1918, 11,759 tons of ore were treated in the mill and yielded 391,367 ounces of silver.

In a report on the Temiskaming mine, dated July 3rd, 1918, R. J. Ennis, consulting engineer for the company, says in part:

The operation of the mine may be divided into two periods. First, from the beginning of production in 1908 to the end of 1913, when veins Nos. 1 to 16 were worked and reached their maximum production, yielding 142,818 tons of ore, from which 7,163,360 ounces of silver were recovered, or 50.2 ounces per ton, including both high grade and mill rock. To make this production possible 21,851 feet of development work was done, or one foot for every 328 ounces of silver obtained. In the second period, from 1914 to the end of 1917, veins Nos. 19 to 21 were opened up and together with a small tonnage from the ends of veins Nos. 1 to 16, produced 91,595 tons of ore yielding 3,664,559 ounces of silver, or 40 ounces per ton of ore mined. Seventeen thousand six hundred and fifty-two feet of development work was performed in this period, or one foot for every 207½ ounces of silver obtained.

All the productive veins on the property have been found in about eight acres of ground in the west half of the Temiskaming lot. On the levels of the mine within this area above the diabase sill and on the 575-, 650- and 725-ft. levels in the diabase 38,000 feet of crosscuts, drifts, raises and winzes have been driven.

The following statements are taken from mine manager McReavy's report dated July 3rd, 1918.

The total footage done on the property previous to 1918 amounted to 39,535 feet. Of this work 38,035 feet were on the Temiskaming lot and 1,500 feet on the Gans lot. The work on the Temiskaming developed the vein system from which 10,837,921 ounces of silver were recovered. Vein No. 2 produced some ore beyond the Temiskaming line, in the Gans lot; but with this exception the Gans has been unproductive.

The development and exploration work on the Temiskaming lot had been so extensive as to leave but small possibilities of finding any new veins of importance above the sill. Future production from this section must depend upon finding good ore in the extension of the known veins which, owing to the large amount of development work already done on them would, necessarily, be of limited extent.

Future possibilities of the property, therefore, depend on finding ore in the Gans lot above the sill or in the Temiskaming and Gans lots below the sill. From the geological report and from long sections of the mine workings, it is apparent that the productive portions of the veins in the Temiskaming lot were directly over a synclinal trough in the diabase, dipping to the east. The workings in the Gans lot show that a similar trough exists in the central portion of the lot, and it was recommended that a cross-cut be driven to the east from the north-south drift on the 500-foot level. This cross-cut has been driven 270 feet, and four strong veins passed through. No silver values were found in any of them, but they all contained niccolite and cobalt. The first vein encountered is being driven on to the south and the second to the north. No silver values have as yet been encountered, but the work continues to be most encouraging, the veins becoming more heavily mineralized and of greater width. . . . .

From the shaft a cross-cut had been driven (on the 1,600-ft. level in the Keewatin), 470 feet to a point directly under the productive vein system above the sill and a calcite vein 6 inches wide, but containing no silver, was passed through.

Since it is believed a synclinal trough above the sill is responsible for the favourable structural conditions in which productive veins occur, it is to be expected that the reverse would be true below the sill and favourable structural conditions found below anticlines in the diabase.

Drifting was started southeast on the calcite vein above mentioned and continued 192 feet without showing improvement. From this point a cross-cut is now being driven due east through the Keewatin under an anticlinal area to prove or disprove the existence of commercial veins.

The ore reserves, exclusive of tailings impounded, were estimated on June 30th, 1918, to be 3,468 tons containing 101,498 ounces of silver.

I. S. McReavy who was mine manager during 1918, resigned early in 1919, and was succeeded by Wm. Cooper.

Three Stars.—The Three Stars Silver Mines, Limited, worked at intervals in 1918 on the Airgiod, or Cyril lake claim. The work done consisted in drifting and cross-cutting on the 90-ft. level in both Keewatin and diabase. Ten men were employed.

H. A. Oswald, Cobalt, is president and manager, and John S. Clark, mine foreman.

Thompson.—The Mining Corporation of Canada worked under option for several months on the southwest quarter of the north half of lot 11 in the second concession of Bucke township. This claim was originally recorded in the name of Arthur Thompson. An old shaft, 100 feet deep, was straightened by the Corporation and continued to 300 feet. From the bottom a cross-cut was driven 275 feet to the southeast, and at 160 feet southeast of the shaft a drift was run to the west on a vein for 70 feet. This drift extends beneath some old workings. Near the face of the cross-cut a diamond-drill hole, pointed about due east, was put down for 426 feet at an angle of 70 degrees. Diabase is said to have been the only rock encountered in all of this work.

On the north half of the northwest quarter of the south half of lot 11 in the second concession of Bucke township the Corporation drilled a second hole in a southwesterly direction at 72 degrees. This hole was stopped at 394 feet and was also in diabase.

The work was discontinued on May 24th, 1919.

Trethewey.—The Trethewey Silver-Cobalt Mine, Limited, has an authorized capital of 2,000,000 shares of a par value of $1.00, of which 1,000,000 shares have been issued. The directors are: S. R. Wickett, president, Toronto; J. B. Tudhope, vice-president, Orillia; W. J. Sheppard, Waubaushene; Gordon Taylor, Toronto; J. P. Bickell, Toronto; L. J. Pashler, Standard Bank Building, Toronto, secretary-treasurer.

The mine and mill were in continuous operation during 1918. There was no development work done, as it is considered that the productive area of the property has been thoroughly explored; 24,514 tons of ore were broken from the walls of old stopes. The mill treated 34,546 tons of 10.2-oz. ore. The net value of the production for the year was $250,534.94.

Machinery was installed for the re-treatment of the old tailings, and a recovery of 3.6 ounces of silver per ton is expected.

One dividend of 5 per cent. was paid during the year.

I. S. McReavy is manager.

Miscellaneous

Farr Quarry.—The Farr limestone quarry, situated in the north half of lot 10 in the third concession of Bucke township, was worked during part of 1918. The limestone was shipped to the Abitibi Pulp and Power Company at Iroquois Falls. The quarry is owned by Mrs. C. C. Farr, of Haileybury, and in 1919 was being worked under lease by John Berry of that place. The face carried is from 5 to 10 feet high, and the overburden of soil averages about two feet in thickness.

Lang Quarry.—The George Taylor Hardware Company, Limited, operated a limestone quarry west of the town of New Liskeard during 1917 and for a short time in 1918. The rock was used for the manufacture of lime. The quarry is situated on the north half of lot 6 in the second concession of Dymond township, and is on the farm of Henry Lang, New Liskeard, Ont.

Prospecting for Oil, Bucke Township.—In May, 1919, a diamond-drill hole was put down in search of oil in limestone on the Farr Estate about a quarter of a mile southwest of Haileybury station. It is reported that the work, which proved unsuccessful, was done for a syndicate of Haileybury people.

D. D. Chisholm, Toronto, is in charge of the work, and George Jamieson, Haileybury, is secretary-treasurer of the syndicate.

Elk Lake and Gowganda Silver Area

Bonsall.—The Bonsall group of claims, comprising R.S.C. 82, 83, 84, and 87, are situated in the Miller lake section of the Gowganda area. M. J. O'Brien, Limited, which has an interest in this group, did some work on R.S.C. 82 in the summer of 1918. On this claim the main shaft was 118 feet deep, with some drifting done to the southwest on the 110-ft. level. The work done in 1918 consisted of about 100 feet of cross-cutting and drifting on this level to the northeast of the shaft.

Castle.—In January, 1918, the Trethewey Silver-Cobalt Mine, Limited, began work under option on the property of the Castle Mining Company, Limited, east of the Miller-Lake O'Brien mine, comprising twelve claims and 120 acres under the bed of Miller lake.

On the northwest corner of R.S.C. 106 a shaft was sunk to a depth of 315 feet. This was begun in Keewatin rock, but from a depth of 100 feet to the bottom of the shaft the rock encountered was diabase. When inspected in May, 1919, the work done was as follows: on the 200-ft. level, 210 feet of drifting west from the shaft; on the 300-ft. level, 1,100 feet of drifting and cross-cutting, 30 feet of raising, and a winze being sunk had reached a depth of 25 feet. The Keewatin formation has been encountered at one point on the 300-ft. level.

The plant consists of two r.t. boilers of 80- and 100-h.p.; an Ingersoll Sergeant Company of Canada compressor of 760-c.f. capacity; an 8 by 10-in. Jenckes hoist for the main shaft, and a 6 by 8-in. Jenckes hoist for the winze.

I. S. McReavy, of Cobalt, is manager, and J. C. Lively, Haileybury, is superintendent. Forty men are employed.

Crews-McFarlan.—The Crews-McFarlan Mining Company, Limited, continued work in No. 2 vertical shaft on claim J.S. 280 near Hewitt lake. This shaft was sunk to a depth of 140 feet. On the 125-ft. level the following was approximately the amount of work done: cross-cutting, 125 feet to the north and 125 feet to the south; drifting, 325 feet to the east and west. All of the work done from this shaft was in diabase.

This company has been working the Bartlett mine in Milner township since July, 1917. In May, 1919, No. 1 shaft was 300 feet deep, with levels at 100, 200 and 300 feet; and No. 2 shaft was 110 feet deep, with a level at 100 feet. The drifting and cross-cutting done since the new owners began work was as follows: No. 1 shaft, 100-ft. level, 500 feet; 200-ft. level, 250 feet; 300-ft. level, 100 feet; No. 2 shaft, 100-ft. level, 250 feet. A raise was also driven from the 100-ft. level of No. 1 shaft to the bottom of an open pit. Twenty-two men were employed.

The officers of the company are: president, C. H. Streit, Nutley, N.J.; vice-president, Walter Little, Nutley, N.J.; secretary, Henry R. Crews, Paterson, N.J.; treasurer, W. J. McFarlan, Paterson, N.J.; N. O. Lindstrom, Albert E. Howe, Robert S. Parsons, W. P. Wells, of Nutley, N.J.; H. Bornemann, Jr., A. J. Hedges, of Newark, N.J.; Chas. Simon, T. F. Malloy, F. W. Ball, of Paterson, N.J.; Alfred Bicknell, of Toronto. Isaac G. Wheaton, Gowganda, is manager.

Hitchcock.—In August, 1918, the Paragon-Hitchcock Mines, Limited, commenced work on the Hitchcock mine, which was formerly worked by the Westmount Mining Company, Limited. This mine is situated on lot 10 in the first concession of Tudhope township. On May 13th, 1919, the shaft, which is vertical, was 162 feet deep, with sinking in progress. There is a level at 100 feet, and here the total work done consists of 260 feet of drifting and cross-cutting and 30 feet of raising. All the work is done in diabase.

The plant consists of a 60-h.p. Jenckes boiler, locomotive type; a six-drill Canadian Rand compressor and a 6 by 8-in. Jenckes hoist.

The capitalization of the company is $2,000,000, divided into shares of $1.00 par value each. The officers are: president, Dr. Donald McKay, Collingwood, Ont.; vice-president, W. R. Hitchcock, Cornwall; secretary, David Melville, Collingwood; directors, E. R. Hitchcock, Wabun, Ont.; Reginald Gilpin, R. Feighan, Wm. T. Herrington, Chas. Pitt, W. A. Hamilton, all of Collingwood; J. P. Welsh, Wabun.

Fourteen men are employed, with J. P. Welsh in charge.

Kell Bros. and Perriault.—Some very rich ore is reported to have been found in a vein in the diabase in Corkill township, near the south boundary and about three miles southwest of Beauty lake. The claim belongs to Kell Bros., Perriault and others.

Mapes-Johnston.—The Brant Mines, Limited, which reopened the Mapes-Johnston mine in October, 1917, ceased work in January, 1918. All work at this mine had been in diabase until, at a depth of 400 feet in the bottom of a winze, the slate-conglomerate formation was encountered. On the 400-ft. level a drift

is reported to have been carried north about 150 feet in slate, but nothing of value was found.

Neil Morrison, of Elk Lake, was in charge of the work.

Miller-Lake O'Brien.—This mine was a regular shipper of silver during 1918. The main shaft, No. 2, is, as before, 450 feet deep, with levels at 60, 90, 140, 200, 240, 300, 350 and 450 feet. No. 4 winze has been sunk from the 350-ft. to the 525-ft. level, and levels opened at 400, 460 and 525 feet. When last inspected, in May, 1919, no work was being done above the 350-ft. level. On that level preparations were being made to remove the ore left in the floor. From the 400-ft. and 450-ft. winze levels stoping was in progress, and on the 525-ft. winze level drifting was being done.

No work was done during the year at the No. 1 or No. 20 shaft.

The mine is owned by M. J. O'Brien, Limited. J. G. Dickenson, Cobalt, is manager; B. C. Crowe, Gowganda, superintendent; W. F. Melville mine foreman and John Cummings, mill foreman. Ninety-two men were employed, of whom 53 were underground workers and 6 mill men.

Reeve-Dobie.—The Reeve-Dobie Mines, Limited, did 650 feet of cross-cutting and 20 feet of raising on the 100-ft. level, and closed down the mine on July 26th, 1918. A. S. Crowe, Timmins, superintended this work.

In the spring of 1919 the mine was again pumped out. The property was inspected on May 16th, when six men were employed on surface work. It was then stated that a flotation plant was being bought.

The company is capitalized at $2,000,000, divided into shares of $1.00 par value each. The officers are: president, Charles Ward, Livonia, N.Y.; vice-president, Herman Meyring, Rochester, N.Y.; secretary-treasurer, Robert Thompson, Rochester, N.Y.; manager and director, Martin H. Jacobs, Gowganda, Ont.

T.C. 177.—Mining claim T.C. 177, situated south of the Miller-Lake O'Brien mine, was worked until November, 1918, by the T.C. Mining Company, Limited. In April, 1919, the claim was acquired by the Palmer-Paine Mines, Limited, which proceeded to prospect it.

On May 14th, 1919, the date of the last inspection, the shaft was 208 feet deep, with a level at 200 feet. On the level 371 feet of drifting had been done to the northeast of the shaft: all this work was in diabase.

The plant consists of a 60-h.p. r.t. boiler, a Canadian Fog Signal Company compressor, 10 in. by 12 in. by 10 in., and a 12 by 14-in. Jenckes hoist.

Neil Morrison, Gowganda, was superintendent, employing seven men. The president of the company is B. P. Paine, Niagara Falls, Ont., and the head office address is Box 429, Toronto.

T. C. 220.—In the summer of 1918 P. Howard Collins, of Gowganda, began work on claim T.C. 220, situated on the southwest shore of Leroy lake. On May 15th, 1919, the work done underground consisted of a shaft 130 feet deep. A 6 by 8-in. Jenckes hoist and a 35-h.p. locomotive-type boiler were then being set up. Six men were employed.

Walsh.—The Crown Reserve Mining Company, Limited, worked from January until October, 1918, on claim R.S.C. 98, comprising land on the south shore and part of the bed of Miller lake. This property formerly belonged to the Walsh Silver Mines, Limited.

The shaft was 60 feet deep and on the 50-ft. level about 50 feet of drifting and 50 feet of cross-cutting had been done. The work done by the Crown Reserve Mining Company consisted of, deepening the shaft to 200 feet; on the 100-ft. level, about 250 feet of drifting to the northeast and 30 feet of cross-cutting; on the 190-ft. level, about 200 feet of drifting to the northeast and 50 feet of cross-cutting.

South Lorrain Area

Curry; Wettlaufer.—The Pittsburgh-Lorrain Syndicate operated the Curry and Wettlaufer silver mines in South Lorrain until November 30th, 1918, when work was suspended at both properties. The surface dumps were worked over and a considerable amount of mill rock obtained from the underground workings.

H. F. Strong was in charge of operations, employing on an average 20 men.

Keeley.—This property was in operation between July and September, 1918, and a car of ore shipped. Work was under the supervision of Malcolm Black, of Silver Centre.

IV.—EASTERN ONTARIO

Pyrite

Grasselli.—The Grasselli Chemical Company, Limited, is developing a pyrite mine on lots 1 and 2, concession 1, Blithfield township. The mine is situated a mile and a half northeast of Clyde lake siding on the Kingston and Pembroke railway. This siding is at railway mileage 22.5 south from Renfrew.

Two shafts have been sunk. No. 1 is inclined at 60 degrees and is 75 feet deep. From the bottom of this a drift is being driven east to connect with No. 2 shaft. This drift was about 400 feet long on April 9th, 1919. No. 2 shaft is being sunk at 56 degrees in the hanging wall; and was 105 feet deep on the above date; this will be the main shaft.

Near No. 2 shaft, an ore bin, boiler and compressor building, dry and warehouse have been built. The plant at this shaft consists of a 100-h.p. horizontal tubular boiler, a 15-h.p. Doty vertical boiler and hoist, and a 465-c.f. Fairhurst compressor.

There are 35 men employed. David S. Tovey is superintendent, and George W. Thomas, mine foreman. The mine post-office is Flower, Ont.

Queensboro.—The Queensboro pyrite mine on lot 9, concession X, Madoc township, was worked continuously by the Canadian Sulphur Ore Company, Limited, and about 80 men were employed.

The main shaft (No. 3) was sunk to a depth of 460 feet, and the sixth level was started at this point. On March 11th, 1919, the west drift on this level measured 90 feet, and the east drift, 64 feet. Most of the stoping done in 1918 was between the second and third levels.

The officers of the company are: president, Alex. Longwell, Toronto; vice-president, Geo. H. Gillespie, Madoc; superintendent, H. F. Smeaton, Queensboro, Ont.

Sulphide.—The mine and plant of the Nichols Chemical Company at Sulphide operated throughout the year 1918. The company manufactured sulphuric, nitric and hydrochloric acids and salteake. The greater part of the acids was disposed of to the Imperial Munitions Board and the United States Government for war purposes. Production was greatly increased during the war, but immediately after the signing of the armistice it dropped to the pre-war basis.

The ore used was taken from the second, third and fourth levels. The mine was successful in winning the prize in the inter-mine safety competition of the Nichols Chemical Company in the United States and Canada.

During 1918 the company built and equipped a manual training and household science building in connection with the public school, the first rural school in the Province to be thus equipped.

The officers of the company are: president, P. W. Nichols, New York; gen-

Electric furnace for producing ferro-chrome, Cordova Mines.

eral manager, E. S. Pincott, New York; secretary, Thos. F. Burgess, New York; treasurer, James L. Morgan, New York; manager, W. H. DeBlois, Sulphide. About 170 men are employed.

Gold

Cobalt-Frontenac.—The Cobalt-Frontenac Mining Company, Limited, near Flinton, Ont., remodelled the mill during the year. The following plant was installed: a 14-in. by 24-in. jaw crusher; two 100-h.p. motors and an Ingersoll-Rand compressor with a capacity of 732 cu. ft. per second. A concrete foundation 72 ft. by 115 ft. for the cyanide plant was also built.

The shaft is 7 ft. by 11 ft., at an angle of 65 degrees, and was sunk 50 feet during 1918, the work being done in the latter part of the year.

The officers of the company are: president, George W. Millan, Stoney Creek; vice-president, Noah Dyment, Guelph; secretary-treasurer, M. Doyle, Hamilton; manager, D. H. Fletcher, Flinton. Twenty men are employed.

Cordova Mines, Limited.—The gold mine of this company in Belmont township, Peterborough county, was not worked in 1918, but the company erected an electric smelting plant at Cordova for the production of ferro-chromium. Owing to delay in the delivery of electrical equipment, the plant was not completed till February, 1919, by which time the market for ferro-chromium was such that it was not considered advisable to operate. The furnace had a capacity of 5,000 lbs. of ferro-chromium a day.

Peter Kirkegaard is managing director of the Cordova Mines, Limited.

Iron

Wallbridge.—G. Wallbridge shipped 245 tons of hematite ore from the dumps of the old Wallbridge mine, near Eldorado, on lot 12 in the sixth concession of Madoc township. This ore was mined eighteen years ago. The shipments were made to the Armstrong Whitworth Company at Longueuil, Quebec.

Talc

Connolly.—The Anglo-American Talc Corporation worked the Connolly talc mine and mill during all of 1918. This property is situated near the village of Madoc, on the northwest quarter of lot 15, in the fourteenth concession, Huntingdon township.

Stoping was carried on between the 50-ft. and 127-ft. levels. On the 188-ft. level, drifts were run 100 feet west and 275 feet east from the shaft, but no stoping was done from this level. Twenty men were employed, of whom nine were underground.

The officers of the company are: president, H. S. Predmore, New York; secretary, H. J. Gilchrist, 82 Beaver St., New York; superintendent, Thos. Carswell, Box 55, Madoc, Ont.

Henderson.—The Henderson talc mine, which has for some years been worked by Cross and Wellington under lease, is now being operated by The Henderson Talc Mines, Limited. The officers of this company are: president, M. H. Ludwig, K.C., Toronto; vice-president, Alex Longwell, Toronto; secretary, Geo. H. Gillespie, Madoc. This mine supplies the George H. Gillespie and Co. talc mill at Madoc.

The work at the mine is being done by Kiviaho and Jackson under contract. Five men are employed.

Geo. H. Gillespie and Co.—Geo. H. Gillespie and Co. worked their talc mill at Madoc station throughout 1918. Eighteen men were employed. Geo. H. Gillespie, Madoc, is manager, and L. Ashley, mill foreman.

International Pulp Company.—The International Pulp Company, of Gouverneur, N.Y., are continuing to prospect for talc on the Pitts farm near Madoc in lot 16, concession XIV, township of Huntingdon.

From No. 1 inclined shaft, which is 50 feet deep, 100 feet of cross-cutting was done in a north-easterly direction. The plant was then moved to a point about

a quarter of a mile west of No. 1, and No. 2 shaft was commenced. The latter was sunk to a depth of 80 feet and is vertical. When last inspected, in March, 1919, about 70 feet of cross-cutting had been done on the 80-ft. level.

Daniel Brownson, Box 97, Madoc, is in charge of the work, and six men are employed.

Eldorado.—The plant of the Eldorado talc mine, near Eldorado, was overhauled in 1918, and mining and milling were resumed in February, 1919. This mine is now worked by the Eldorado Mining and Milling Company, Limited, successors to Eldorite, Limited.

The officers of the new company are: president, S. J. Morand; secretary, J. J. Morand; treasurer, R. J. Morand; all of Chicago. The superintendent is R. M. Phillips, Eldorado.

Twenty men are employed, of whom four are underground and twelve in the mill.

Fluorite

Bailey.—This mine, on lot 1 in the fourth concession of Madoc township, was idle in 1918.

Blakeley.—On the farm of W. Blakeley, lots 9 and 10, concession XII, Huntingdon township, S. Wellington, of Madoc, has stripped some fluorite veins. When visited in March, 1919, the best showing was a vein up to three or four feet in width, which was exposed by test pits for some 300 feet.

Canadian Fluorite.—After being idle for several months, the Keen, situated on lot 9 in the fourteenth concession of Huntingdon township, was reopened in March, 1918, by Canadian Fluorite, Limited.

On March 15th, 1919, the shaft was 65 feet deep, with a level at 50 feet. The drifting amounted to 160 feet to the north of the shaft, and 100 feet to the south. At 150 feet north of the shaft on the 50-ft. level a winze has been started, and was 16 feet deep at the date mentioned. No stoping has been done, but several shipments were made in 1918 from development work. Seventeen men are employed.

The surface plant consists of one 40-h.p. and one 60-h.p. locomotive-type boiler, one Ingersoll compressor, capacity about 200 cu. ft. per min., and a Wm. Beatty and Sons hoist, 10 by 14 in.

The officers of the company are: president, F. R. Miller, Toronto; vice-president, Roy Miller, Toronto; secretary-treasurer and manager, E. N. Tutt, 503 Lumsden Building, Toronto; superintendent, A. W. Grierson, Madoc.

Dwyer Prospect.—In 1918 P. J. Dwyer, Wilberforce, Ont., shipped one car of uncobbed fluorite from his claim on lot 8, concession XXII, township of Cardiff.

Lee.—The Lee fluorite mine, on lot 1 in the first concession of Madoc township, was worked continuously in 1918 by H. L. Usborne.

A shaft was sunk to a depth of 60 feet, and at the bottom drifts were driven north 30 feet and south 70 feet. The vein is vertical, from 3 to 8 feet wide, and

contains a mixture of calcite, fluorite and barite in granular form, locally known as "gravel spar." Shipments in 1918 amounted to 600 tons.

Frank Cassin was in charge of the work.

Noyes.—The Canadian Industrial Minerals, Limited, continued work on the Noyes mine in 1918. This lies in lot 13 of concession XII, Huntingdon township, and is about three miles south of Madoc village. On the first of March, 1919, the underground work done at this mine was as follows: Two shafts sunk: No. 1, inclined, 100 feet deep, and No. 2, vertical, 125 feet. No. 2 is the working shaft and lies 210 feet northwest of No. 1. The 100-ft. level connects the bottoms of these shafts. On this level about 800 feet of drifting and cross-cutting has been done. At a point 80 feet southeast of No. 1 shaft, a winze has been sunk from the 100-ft. to the 200-ft level. On a level at 150 feet, 35 feet of drifting has been done to the north and the same amount to the south, while on the 200-ft level the drifting amounted to 25 feet. Stoping has been confined to the ground above the 100-ft level adjacent to No. 1 shaft.

The fluorite is cobbed and hauled by motor lorry to Moira Lake siding, on the Grand Trunk railway, about a third of a mile away. About 35 men are employed.

The officers of the company are: president, J. P. Watson; vice-president, W. R. P. Parker; director, G. M. Clark; secretary-treasurer, W. W. Perry; all of Toronto; manager, R. C. Bryden, Madoc. The head office is 1,511 to 1,520 Bank of Hamilton Building, Toronto.

Perry.—The Perry fluorite mine, situated on the north shore of Moira lake, on lot 11, concession XIII, Huntingdon township, was worked in 1918 by Wellington, Cross and Bowman.

At the time of last inspection, March 6th, 1919, the underground work was as follows: Nos. 1, 2 and 3 shafts were respectively 35, 80 and 95 feet deep. From No. 3, the working shaft, levels have been established at 50 and 90 feet. On the 50-ft. level the vein has been stoped for a distance of 30 feet north from the shaft. On the 90-ft. level 40 feet of drifting has been done to the north and 50 feet to the south. This mine makes a large amount of water.

Albert Terrill, of Madoc, is manager, employing ten men.

Wallbridge.—The Wallbridge mine, on the west half of lot 4 in the first concession of Madoc township, was worked continuously in 1918 by H. L. Usborne.

A shaft 75 feet deep was sunk, and 40 feet of drifting done south of the shaft. The vein, which can be traced for 400 feet, was from one to three feet wide on the surface, but pinches to six inches on the 75-ft. level. Eighty tons of fluorite were shipped during 1918. This mine was closed during the winter of 1918-19, but work was resumed in March, 1919.

Frank Cassin is in charge.

Lead

Galetta.—The lead mine, concentrator and smelter on Chats island, near Galetta, belonging to the estate of James Robertson, Montreal, was in continuous operation during 1918.

Early in 1919 a new operating company was formed known as the Kingdon Mining, Smelting and Manufacturing Company, Limited, of which Chas. M. Robertson is president, John J. Milne, secretary-treasurer, and A. G. Munich, managing director. The head office is at 314 Beaver Hall Hill, Montreal.

Underground work was confined to the 2nd and 3rd levels from the new shaft. At the close of 1918 the 2nd level had been opened up 192 feet to the west and 368 feet to the east; on the 3rd level 208 feet to the west and 384 feet to the east.

Plans are under way for the enlargement of the concentrating plant during 1919, the smelting capacity being greater than is necessary to take care of the present mill production.

Part of the grey slag from the Scotch hearth is being treated by the Kingston Smelters at Kingston.

C. M. Thompson is mine superintendent, employing on an average 65 men.

Feldspar

Dwyer Prospect.—P. J. Dwyer, of Wilberforce, Ont., shipped a carload of feldspar in 1918 from his claim in lot 31, concession VI, Glamorgan township, about 1¼ miles east of Gooderham station, on the Irondale, Bancroft and Ottawa railway.

Eureka Flint and Spar Company.—The quarry at Verona adjoining the Hurlburt property, operated during the year with a capacity of about 20 tons per day of feldspar. The output is shipped to Trenton, New Jersey, where the head office and pottery works of the company are located. Several quarries in the United States are owned and operated by the same company.

The quarry, which is now 200 feet long, 60 feet wide and 30 feet deep, is worked in three benches. An additional 30-h.p. boiler was installed during the year for hoisting the rock to the surface, where it is loaded on wagons and drawn 2½ miles to the railway at Verona. Fifteen men were employed.

The officers of the company are: John E. Throp, president; Frank W. Throp, treasurer; Peter D. Throp, secretary; John C. Wilkes is manager for the Canadian quarry.

Feldspars, Limited.—The feldspar quarry near Verona owned by this company was operated up to December 21st. Work was carried on at maximum capacity, owing to the demand for war material, up to November, when the demand ceased, and work was discontinued in December.

There were no changes in the operation; stoping was continued in benches, principally in the southern end of the quarry. The ore is taken up the incline in cars, and transported across the lake to Glendower station on scows.

The officers of the company are: S. H. Worth, president; R. F. Segsworth, secretary-treasurer; Ralph Scott, manager; the head office is at 103 Bay Street, Toronto. About 55 men were employed.

Feldspar Quarries, Limited.—The quarry near Verona, owned by this company, operated during the year 1918, and shipped about 20 tons per day of clean spar

to Rochester, New York. A small quantity of quartz was also shipped. The quarry is about 150 feet long, 85 feet deep and 45 feet wide, and was extended about 30 feet to the south during the year.

George W. Hurlburt, Verona, is manager, employing 15 men.

Mica

Loughborough Mining Company.—The Lacey mine, near Sydenham, in Loughborough township, is operated by the General Electric Company.

The mine was operated continuously during 1918, about 7,000 lbs. of mica per week being produced and shipped to the company's plant at Sorel, Quebec.

During the summer months work was carried on in the open pit, and during the winter stoping was continued on the main vein, which is about 16 feet wide. This stope was lowered 15 feet for a distance of 45 feet, which necessitated the installation of a hoist on the fourth level, which raises the mica to the seventh level, where it is hand-cobbed. It is then taken to the sorting room at the shaft house, where it is trimmed and packed in barrels for shipment.

George M. McNaughton is manager, and Richard Smith, superintendent: an average of 22 men was employed.

Davis Township Mica Prospect.—A mica prospect is being developed in a portion of Ontario in which mica of commercial grade has not hitherto been mined. It is situated on the southeast quarter of the north half, concession I, of the township of Davis, and is reached by taking the Canadian National railway to Ess Creek, 59 miles west of North Bay. An alternative route is by tote road running north from Markstay on the main line of the Canadian Pacific railway for 14 miles to Ess Creek. The vein is a mile and a quarter east of the point where the Canadian National trains stop, and is about two hundred yards south of the railway with Ess Creek intervening.

The claim was staked by B. A. Grant, of Sturgeon Falls, on October 21st, 1910, and was bought the following year by D. J. Finlan, of Markstay. In 1918, under a working arrangement with the owner, Clarke and Lounsbury of North Bay shipped some mica from an open cut. In 1919 Mr. Finlan sold the claim to W. C. Smith, of 218 South Wabash Avenue, Chicago, who at once began work on the vein. Negotiations are in progress whereby a company, to be called the Standard Mica Company, will be the operator.

The mica occurs irregularly distributed in a pegmatite vein of pink and white feldspar and quartz. The strike of the vein is N. 65° E. (magnetic), parallel to the foliation of the adjoining gneiss, and the dip is perpendicular.

When visited on July 3rd, 1919, a pit, 16 feet in depth at the deepest point, had been excavated on the vein for 130 feet. At one place in the pit the vein is missing for fourteen feet, and here a pillar of rock has been left. The vein is from two to nine feet wide in the pit, and can be traced for 450 feet to the northeast by occasional outcrops. The wall-rock is hornblende-gneiss, and is in part garnetiferous. Embedded in a soft, bronze-coloured, micaceous mineral on the north wall of the vein crystals of brownish-red garnet up to five inches in diameter have been found. These large crystals were much altered.

In colour the mica is light to smoky brown, and none of the pieces had a well-

defined crystal outline. The largest piece seen measured about 5″ x 8″. Judging from the nature of the occurrence, the species is probably muscovite, but it is darker in colour than muscovite generally is. A complete analysis was not made of any of this mica, but a partial analysis of one specimen by W. K. McNeill, Provincial Assayer, showed 8.38 per cent. potassium oxide (K_2O) and 0.89 per cent. sodium oxide (Na_2O).

Shipments made from this vein consisted of 300 pounds by Clarke and Lounsbury in 1918, and 1,000 pounds by W. C. Smith up to July 1st, 1919. These shipments were of untrimmed mica.

There are nine workmen employed and two log cabins have been built for their accommodation. The only piece of machinery yet obtained is a Chris D. Schramm and Son combined gas engine and air compressor. This is housed in a third small log building. The work is in charge of James W. Cohn, superintendent, and Richard J. Stacey, foreman. The postal address is Ess Creek, Chudleigh, Ont.

Molybdenite

British Molybdenite, Limited.—This company has acquired a molybdenite prospect on lot 32 in the fifth concession of Glamorgan township, about 1¼ miles east of Gooderham station on the Irondale, Bancroft and Ottawa railway. During the summer of 1918 six men were employed in trenching.

The officers of the company are: president, Harry Secord, Toronto; secretary, George W. Hunt, Toronto; head office, 34 Victoria Street, Toronto.

International Molybdenum Company.—The mine owned by this company in Brougham township was not operated in 1918, and the custom concentrator at Renfrew was also idle during the year. The smelter and refinery at Orillia was closed in January, 1918.

The Electro Foundries, Limited, an associated company occupying the plant at Orillia, was a producer of ferro-molybdenum and ferro-magnesium up till December, 1918.

The Orillia Chemical Company, a subsidiary of the Electro Foundries, Limited, with a capacity of between 3,000 and 4,000 lbs. of molybdenum chemicals per month, and utilizing the plant of the International Molybdenum Company, was in operation during 1918, using molybdenite concentrates obtained from Quyon, Quebec.

The officers of the International Molybdenum Company are: J. L. Murray, president; H. A. Jordan, secretary-treasurer; B. C. Lamble, smelter manager

Joiner.—W. E. Joiner, 553 Sherbourne Street, Toronto, is prospecting a molybdenite deposit on lot 3, concession XX, Cardiff township, about a mile and a half southeast of Wilberforce village. At the end of February, 1919, a prospect shaft was being sunk and was then about 25 feet deep. Seven men were employed, with Clarence Godfrey as foreman.

Molybdenum Products Company.—The Molybdenum Products Company, Limited, is operating on lot 32, concession XV, and lot 32, concession XVI, township

of Monmouth, near the village of Wilberforce on the Irondale, Bancroft and Ottawa railway.

The power plant consists of two r.t. boilers, one Jenckes 150-h.p., and one Goldie and McCulloch 180-h.p.; one 135-h.p. compound Wheelock-Goldie and McCulloch engine, and one 50-h.p. Erie engine.

The ore is hoisted in a 1¼-ton skip from a quarry up a 10-degree tramway to the mill. The skip dumps into a bin holding 200 tons, which is the estimated capacity of the mill per 24 hours. The ore is crushed to one inch by a 11 by 26-inch jaw crusher. It is then hoisted by a bucket and chain elevator to a 175-ton bin, whence it is fed by an automatic feeder to a No. 64 Marcy ball mill. The discharge from the mill is elevated to a 14 ft. 8 in. Dorr duplex classifier. The oversize from the classifier returns to the ball mill, and the undersize goes to five Callow roughing cells. The concentrates from the latter pass to two Callow cleaner cells and the tailings to waste. The concentrates from the cleaning cells pass to an 80-mesh Callow screen. The oversize from the latter is the final product, and is de-watered in a drag de-waterer; these concentrates are then dried over a brick oven. The tailings from the cleaning cells return to the roughing cells, as does also the undersize from the Callow screen.

The mill and tramway were completed in December, 1918, and work was then begun in the quarry.

The officers of the company are: president, O. D. Walters, Council Bluffs, Iowa; vice-president and managing director, M. B. R. Gordon, Wilberforce, Ont.; secretary-treasurer, George Urquhart, St. Paul, Minn.; directors, the above-mentioned, J. J. Hennen, St. Paul, Minn., and George Moss, Lohrville, Ia.

Forty men are employed. I. L. Church is foreman at the mine, and J. C. Duval at the mill.

Ontario Molybdenum Company, Limited.—This company owns a molybdenite deposit situated about 1½ miles northwest of Tory Hill station, Irondale, Bancroft and Ottawa railway. Work was carried on during part of the summer of 1918, and 7 cars of uncobbed ore were shipped to the Department of Mines, Ottawa. Work was stopped in August, 1918. There is no plant on the property.

The officers of the company are: president, R. J. Lillico; vice-president, C. Leslie Wilson; directors, A. Watson, J. A. Gilmour, C. Leslie Wilson; all of Toronto. The head office is in the Mail and Empire Building, Toronto.

Steel Alloys.—The Steel Alloys Corporation continued to work the Sunset molybdenite mine in lots 35 and 36, concession XIV, Brougham township, until October, 1918. One carload of ore was shipped to the Department of Mines Laboratory, Ottawa, and the remainder was stock-piled. The ore was taken from an open cut.

During the year the company bought the Spain mine, consisting of lots 30, 31, 32 and 33, concession IV, and lots 30, 31 and 32, concession V, Griffith township, 700 acres in all. This purchase makes the total holdings of the corporation 900 acres. Since October, 1918, work has been in progress to effect certain changes in the mill. Two Callow roughing cells and one cleaning cell are being put in,

and it is expected that the remodelled mill will be ready to start in May, 1919. Twelve men are employed while the alterations are in progress.

The officers are: president, Wm. Wernick, Newark, N.J.: vice-president, John A. Howard, Wheeling, W. Va.: secretary and treasurer, Miss M. Johnston, Wheeling, W. Va.: manager, Joseph E. Cole, Dacre, Ont.

Graphite

Black Donald.—The Black Donald Graphite Company, Limited, own the following property in Brougham township, on Whitefish lake, 14 miles west of Calabogie: part of lot 20 in the first concession: lots 17, 18 and 19 in the third concession: part of lots 15, 16, 17 and 18 in the fourth concession. All of the work done to date has been on the southeast side of Whitefish lake in the third concession.

The mine and mill were operated continuously on a double shift during 1915, 1916, 1917 and 1918, and an average of 105 men were employed, 29 underground and 76 in the mill and on surface work. During February, 1919, the operations were changed to a pre-war basis, or daylight shift.

The output of finished material on a two-shift basis is 13 tons of refined graphite, and on a single shift is 6½ tons per day.

The Black Donald deposit is a large and rich body of flake graphite. The ore averages 65 per cent. graphitic carbon, but material averaging as high as 80 per cent. is frequently encountered. The two principal deposits, or parallel veins, dip to the northeast at an angle varying from 20 to 40 degrees, and have been traced for 800 feet. The width of the main vein averages 20 feet for a distance of 700 feet, at which point it swells out to 70 feet in thickness. The country rock is crystalline limestone.

The first operations were begun in 1896 by The Ontario Graphite Company, Limited. In 1901, owing to failure to leave sufficient cap rock in the stope under the lake, the mine was flooded by the lake breaking in, and as a result was closed down for several years.

In 1904 Rinaldo McConnell leased the property and built a dam around the break, thereby effectually shutting out the lake water and permitting the resumption of mining operations.

In 1908 the Black Donald Graphite Company, Limited, took up the work of mining and refining under a long-term lease, and finally purchased the property in 1917.

The first shaft sunk, No. 1, was 80 feet deep and vertical. From the bottom of this shaft drifts were run 200 feet northeast towards the lake and 24 feet southwest. In the northeast drift a stope 120 feet long was carried to a height of from 30 to 50 feet above the level. In 1902, after the water broke into the stope, a 34-foot shaft, No. 2, was sunk 200 feet southwest of No. 1. From the bottom of the new shaft 50 feet of drifting was done, and the deposit was found to widen to 46 feet at one point. In 1905 No. 3 shaft was started 170 feet southeast of No. 1 shaft, and was sunk 170 feet at an angle of 50 degrees, dipping to the northeast. From this shaft the deposit was stoped in both directions, but principally to the east. This opening, through the continuous removal of ore, finally became an open pit through which hoisting is still carried on by means of an incline skipway. At

the present time stoping is being carried on 500 feet northeast of the No. 3 shaft and 175 feet below the level of the lake. The deposit at this point is 70 feet thick and 125 feet wide. The underground work done to date has shown the deposit to be 800 feet long. The presence of an important parallel deposit has been proved 30 feet to the southeast of the original vein at a depth of 90 feet. This vein is 14 feet thick and 70 feet wide, and contains rich ore, but is not at present being worked, as the company is confining its operations to the big mine, having found it to be more economical to work one vein at a time.

During the year 1917 this company mined, refined and shipped 2,844 short tons of graphite, and in 1918, 2,867 short tons.

The officers of the company are: president and treasurer, R. F. Bunting; secretary, J. N. Snead; superintendent, John D. Patno. Head office is at Calabogie, Ont.

Desert Lake.—A graphite prospect, situated on Desert lake, eight miles east of Godfrey station, Kingston and Pembroke railway, was being diamond-drilled in March, 1919. This property belonged to L. Beardmore, Toronto, but was recently sold.

Globe.—The Globe Graphite Mining and Refining Co., Limited, did no underground work at the mine near Port Elmsley in 1918 until June. Then they resumed work in the old workings, which are served by an inclined shaft. On the third level, which is at a depth of 260 feet, measured along the slope, a drift was advanced 100 feet on the vein to the northeast, making a total distance of 180 feet from the shaft. Forty-five feet of raising was done in ore above this level, and part of the ground was stoped.

The mill worked at intervals during the year. One unit of the Spearman concentration process was put in use.

Operations ceased in February, 1919.

The officers are: president, Windsor Morris, Syracuse, N.Y.; secretary-treasurer, Geo. C. Fryer, Syracuse; superintendent, R. W. Sweet, Port Elmsley, Ont. Head office, 410 Dillaye Building, Syracuse, N.Y.

National.—In 1918, National Graphite, Limited, did some surface work and placed a 50-ton concentrating unit of the Spearman process in the mill at Orser siding, about one mile west of Harcourt (Mumford Station). The holdings here comprise lots 9, 10 and 11 of concession XXII, Cardiff township.

Milling was started in January, 1919, the ore being obtained from an open pit near the mill. When last inspected, in February, 1919, 45 men were employed.

No work was done at the Maynooth graphite mine, which is also owned by this company.

The officers of the company are: president, W. A. P. Schorman, Toronto; manager, H. T. Bush, Harcourt, Ont.; superintendent, G. Gill, Harcourt, Ont.

Timmins Mine.—In 1918, Noah Timmins, of Montreal, bought a graphite property situated on the Frank Haughan farm at the western end of Black lake. The holdings acquired were the land and mineral rights of the north half of lot 25,

concession V, and the south half of lot 25, concession VI, and the mineral rights only of lots 24, 26 and the south half of lot 25, concession V, in the township of North Burgess. The mine may be reached by driving some fourteen miles southwest from Perth, or seven miles northeast from Westport.

Previous to 1918, no work had been done to test this deposit, with the exception of the sinking of a few test-pits. In the summer of that year, considerable stripping was done, and about 1,000 feet of diamond drilling, with satisfactory results. In September, construction work was begun, and when last inspected on April 5th, 1919, the mill building, 42 feet by 72 feet, was completed, and the following machinery was being placed in position: two locomotive-type boilers, a Lidgerwood and a Jenckes; a duplex vertical engine 12 by 12 inches; two Gates gyratory crushers, a No. 3 and a No. 5; a bucket elevator; two units of the Spearman process; a rotary dryer and four bolting machines. It is expected that milling will be started before May 15th. Eventually, hydro-electric power will be used.

The ore body lies in crystalline limestone, has a strike of about N. 80 degrees E., and seems to have a dip to the south of about 70 degrees. In width it reaches a maximum of 30 feet, and an average of about 10 feet, and has been traced for three-quarters of a mile. The graphite is disseminated in a gangue of calcite and pyroxene with small amounts of pyrite, barite and apatite. The ore will for some time be obtained from open-cut workings, and 10,000 tons has already been stockpiled. The deposit is promising, and may develop into an important shipper.

It is intended to haul the product to Narrow Locks on the Rideau Canal in the summer, a distance of two miles, and to Westport in the winter months.

The property is in charge of W. P. Alderson, and 48 men are employed. The mine post-office is Stanleyville, Ont.

Marble

Bancroft Quarries.—The Bancroft Marble Quarries, Limited, have leased the property of the Ontario Marble Quarries, Limited, whose quarries have been idle since 1915.

In August, 1918, repairs were begun on the plant, which is situated near Bronson siding, some three miles south of Bancroft in lots 29 and 30, concession X, Dungannon township. The mill was started in December, 1918. When last inspected, in February, 1919, marble was being excavated, sawed and polished for the Federal Parliament buildings, and from 20 to 25 men were employed.

The mill contains a Whitelaw boiler, a Whitelaw engine, four F. R. Patch Mfg. Company gang saws, a rubbing-bed and two polishing machines.

The officers are: president, Walter Page, Toronto; vice-president, John T. Hepburn, Toronto; secretary and manager, John T. Hoidge, Bancroft, Ont. The head office is at 34 Price Street, Toronto.

Other Quarries

Canada Cement Co., Plant No. 5.—Work was carried on in the limestone quarry of the Canada Cement Company Plant No. 5 at Point Anne, Ont., during all of 1918, and in the clay pit during part of the year.

When last inspected, April 17th, 1919, the clay pit was idle, but 20 men were employed in the quarry. A cut, 20 feet deep, was being made along one face preparatory to deepening the whole quarry.

H. L. Shock is superintendent, and E. W. Bailey assistant superintendent. The post-office address of this plant is Belleville, Ont.

Ontario Rock.—The quarry of the Ontario Rock Company, Limited, near Havelock, was operated from April 1st to December 15th, 1918, the output being considerably reduced owing to scarcity of labour and smaller demand. This trap-rock quarry has a face of 85 feet and is 450 feet in length. The drilling has been done in 16-ft. benches. In the latter part of the year a cyclone drill was started which will be used to drill holes the total depth of the face. The product shipped ranges in size from ¼-inch to 2-inch; also a coarser grade from 2-inch to 5-inch. The greater part of the product is used for paving in Toronto. The shipments during 1918 amounted to 18,000 tons. Forty-five men were employed.

The officers of the company are: president, Alex. Longwell, Toronto; vice-president and general manager, Geo. W. Rayner, Toronto; superintendent, S. Bradley, Preneveau, Ont.

Point Anne.—Crushing was carried on at the plant of the Point Anne Quarries, Limited, Point Anne, during all of 1918 with the exception of one month. Most of the rock (limestone) was shipped to Hamilton and Toronto. Forty-eight men were employed.

The officers of the company are: president, M. J. Haney; secretary-treasurer, A. M. Harnwell; manager, J. F. M. Stewart; all of Toronto; superintendent, A. G. Bennett, Point Anne, Ont. The head office is in McKinnon Building, Toronto.

V.—SOUTHWESTERN ONTARIO

Gypsum

Ontario Gypsum Company, Limited.—This company is an amalgamation of the Crown Gypsum Company of Lythmore and the Alabastine Company of Caledonia. At Lythmore the grinding plant was not operated during the year, and the equipment at the mine 3½ miles distant was dismantled. A new shaft is being sunk near the grinding plant. This shaft is now down 42 feet. Sinking operations were greatly retarded by the large volume of water encountered.

At Caledonia both mine and mill were operated continuously during the year, the production being about 200 tons of crude ore daily from the mine.

Hardwall plaster, plaster of Paris, land plaster and bug finish are manufactured, and crushed gypsum rock is shipped to Portland cement companies.

The Ebsary Fireproofing and Gypsum Rock Company, whose plant adjoins that of the Ontario Gypsum Company at Caledonia, take about 15 tons a day of plaster of Paris. Another industry, which has located beside the plant of the Ontario Gypsum Company, is the Canada Plaster Board Company; they will take about 20 tons of plaster of Paris daily.

The Carson mine was operated during the winter months. Operations at the Caledonia mine were confined to the second or 70-ft. level. Production from the third level was discontinued.

W. C. Case, Buffalo, is president of the company; R. C. Haire, Paris, is secretary-treasurer. The head office is at Paris, Ont., and the works office at Caledonia. A. J. Parkhurst is general manager; about 80 men were employed on an average during the year.

Quarries

American Cyanamid Company.—In 1913 the American Cyanamid Company of Niagara Falls purchased 77 acres about a mile east of Ingersoll; approximately 50 acres of this is available for quarry purposes.

In 1918 development work was commenced on a 10-acre tract. A canal 2,000 feet long was dug, and the Thames river was diverted from the site of the proposed quarry. A dike is now being built to the elevation of the railroad.

A 300-k.w. transformer house will be built and electric power used on all equipment. A cyclone drill and air compressor have been purchased.

The company expects to be shipping rock in the early summer of 1919 to its plant at Niagara. Up to the present time material has been purchased from other quarries.

D. R. Thomas, of Ingersoll, is manager.

Beachville White Lime Company.—The quarry owned by this company is situated about six miles west of Woodstock. Operations were carried on continuously during 1918. Lime kilns were also operated and produced about three carloads of white lime per week.

The quarry covers about three acres, the face varying from 30 to 40 feet in depth, and holes are drilled to this depth.

One steam hoist and two electrically driven hoists are used on the derricks. The electric power for the hoists and pump is supplied by the Hydro-Electric Power Commission.

About 80,000 tons of stone were supplied to blast furnaces for flux during the year.

About 1,500 feet of railway line to the adjoining property on the west was graded, and a small amount of development work done. This will be opened up during 1919 and worked in addition to the present quarry.

The officers of the company are: M. S. Schell, president; J. W. Blow, secretary-treasurer; C. E. Downing, manager; about 42 men were employed during the year.

Canada Cement Company, Limited.—The quarry and mill at Port Colborne were shut down on January 15th, 1918, owing to the demand for power from the munition plants. Advantage was taken of the shut-down to make thorough repairs throughout the mill.

S. R. Prescott is manager, and L. M. McDonald superintendent.

Canada Crushed Stone.—The Canada Crushed Stone Corporation, Dundas, worked throughout the year supplying flux to the blast furnaces at Hamilton; also building and road material. The production during 1918 was about 300,000 tons, two-thirds of which was supplied to the road and building trades.

Electric power, supplied by the Cataract Power Company, is used throughout the plant and quarry. The total capacity of the motors connected is 1,000 horsepower. About 60 men are employed.

The officers of the company are: C. M. Doolittle, president and general manager; J. B. Hart, secretary-treasurer and assistant manager.

Christie-Henderson Quarry.—The Christie-Henderson quarry, about five miles west of Milton, operated two kilns during the year, producing about 40 tons of lime per day. The part of the quarry now being worked is 400 feet long and has a face of 65 feet.

D. D. Christie is president, and Neil Martin manager at Kelso; 17 men were employed during the year.

Constructing and Paving Company.—This company is operating about two miles from the village of Erin. The pit has a face of 14 feet. The material is hauled by cable to an elevator on the surface and hoisted to screens, where it is separated into grades for loading into cars. The products are: sand, pea gravel, ½-inch and 2-inch stone. The capacity of the plant is 200 tons per day.

Elora White Lime Company.—The Elora White Lime Company worked throughout the year 1918. The quarry is 70 feet long, 70 feet wide, and has a face of 22 feet. The stone is hauled up an incline to the plant. The greater part of the production is hydrated lime, but lump and agricultural lime is also shipped. A cyclone well-drill is used for drilling. Twenty men are employed.

The officers of the company are: president, M. B. Church; secretary-treasurer and general manager, P. E. Hare; superintendent, T. F. Robinson, Elora.

Hambleton.—The Hambleton quarry, near the village of Hagersville, was operated for two weeks only in 1918, owing to scarcity of labour and cars for shipping.

The company is preparing to enlarge the crushing plant and to add another crusher in 1919. Electric power will be used instead of steam.

The production is used almost entirely for road-building.

The quarry is owned and operated by Robert Hambleton, Hagersville.

E. Harvey and Son.—The quarry owned by this firm, at Rockwood, near Guelph, operated for nine months during 1918. Only one of the three kilns was in operation, as demand was limited. The quarry now covers about 2 acres and has a face of 30 feet. An electrically driven compressor was installed. The stone is hauled in carts to the kiln, which produces about 20 tons per day. An average of 10 men was employed.

The quarry is operated by the owners, E. Harvey and Son.

Longford Quarry.—The Midland Iron and Steel Company operates a quarry on lots 26 and 27 in range one of the township of Rama, near Longford, for limestone. The product is used as a flux at the blast furnace at Midland. The work is being done by contract by Thos. Morgan, who employs about 20 men. The equipment comprises steam drills, crane and hoist.

Maple Sand, Gravel and Brick Company.—This company, at the village of Maple on the Grand Trunk railway, operated from April 1st, 1918, to the end of the year.

The pit is about 200 feet long and has a face of 115 feet. About 90 per cent. of the sand is hoisted by a 15-ton locomotive crane with a 1½ yard bucket to a screen which separates the sand and the gravel: the remaining 10 per cent. is loaded directly into the cars. About 30 per cent. of the product is gravel. Only a small amount of culvert tile was manufactured during the year, as a large stock of drain tile and cement bricks had been carried over from the previous year. The greater part of the sand and gravel is shipped to Toronto for concrete work. Five men were employed.

T. Cousins is president and general manager: George C. Lovies, 78 Spadina Avenue, secretary-treasurer.

Michigan Central Quarry.—This quarry, near the village of Hagersville, is owned and operated by the Michigan Central Railway. It was operated during 1918 up to November 2nd, and the output was used by the company on its railway lines in Canada.

The quarry now covers an area of about 16 acres, has a face of 16 feet and is about 600 yards long. The holes are drilled the full depth of the face, and the rock is trammed by horses to the foot of the incline and elevated by hoist to the crushers, where it is crushed to 1-inch and 3¼-inch by two crushers, a No. 5 and a No. 7½ Austin gyratory. Power is furnished by steam boilers, two of which are 75-h.p. each, and one is 80-h.p. The screenings are sold to the municipalities for road-building, and about 500 yards of crushed stone was also sold for the same purpose.

D. E. Cronin is superintendent, employing about 40 men.

National Potash.—The National Potash Corporation, Limited, has an authorized capitalization of 1,500,000 shares of a par value of $1.00. The directors are: E. L. Wettlaufer, Toronto, president; G. W. Morris, Buffalo, vice-president; W. S. Milne, Toronto, secretary-treasurer; J. L. McPherson, Islington; A. B. Crosby, Toronto; W. L. Wettlaufer, Toronto, general manager. The head office is at 178 Spadina Avenue, Toronto. The reduction works and quarry are at Gravenhurst (Muskoka Wharf).

The quarry is operated for crushed rock for road material, the feldspar being sorted out for treatment in the reduction works. Work in the quarry, which was operated most of the year, is being done under contract by R. Theodore.

At the reduction works a 200-ton blast furnace, 192 by 42 in., and the necessary blowers were installed during the summer of 1918, and in October the furnace was put in operation. Results were not satisfactory, and it was decided to replace the blast furnace by an electric one.

Three acid towers, 40 feet high and built of concrete, have been completed, as well as the necessary concrete vats and evaporating pans.

Patterson Sand and Gravel Company.—The sand and gravel pit at Stamford operated during the year, although during the winter months the output was greatly decreased.

The pit is 200 yards wide and 2,100 feet long, and has a face of 66 feet.

The material consists of moulding sand, gravel and sand for building purposes. It is loaded directly into the cars by a 12-ton derrick and a clam-shell driven by a 10-h.p. electric motor.

Robt. Patterson, of Stamford, is manager, employing an average of 8 men.

Queenston.—The quarry was worked during the entire year, although the demand for building stone was considerably below that of the previous years. It is 500 feet long, with 30-foot face. A layer of about 15 feet of grey rock is taken off for road-building and concrete. The material is crushed and carried to the chute by a 16-inch conveyor belt, where it is loaded in Michigan Central cars. A quarry a short distance from the main one is also worked. The capacity of the crushing plant is 250 tons per day.

Two derricks are used continuously and two others at intervals. An average of 20 men was employed during the year.

Chas. Lowery is president and manager, and T. W. McKeown secretary.

D. S. Robertson Company.—On the property near Milton owned by this company one kiln was operated with a capacity of 20 tons of lime per day. The quarry is 120 ft. by 30 ft., has a 60-ft. face and is worked in eight benches.

The officers of the company are: D. Robertson, president; J. S. Robertson, secretary. Fifteen men were employed.

Rocsand.—The Rocsand Company, at Erin, operated from June 17th to December 10th, 1918, employing about 7 men. The company owns a property of 33 acres of sand and gravel. The material is loaded into cars of 9 cu. ft. capacity and is hauled up an incline to the crusher. All material passes through the crusher, as a small percentage of the rock is oversize. It is then elevated to the screens and separated into three grades: sand, 1-inch, and 2-inch. The product is loaded into cars from the bins, or passes to an elevated belt conveyor and is carried to the stock piles. The face of the pit is 500 feet long, and the plant has a capacity of 500 tons per day.

The officers of the company are: H. N. Kittson, president and secretary-treasurer, Hamilton; W. S. Connolly, vice-president, Hamilton; W. J. Dickson, superintendent.

St. Marys Cement, Limited.—The St. Marys quarry was operated throughout the year 1918 and produced about 80,000 tons of rock for the cement plant. This was about 65 per cent. of the normal output, the amount of power being restricted.

The quarry covers about four acres at present, with a face of 36 feet. The holes are drilled 5 inches in diameter and 38 feet deep, from 100 to 150 lbs. of dynamite being used for each hole. About 20 holes are blasted at each shot, which is sufficient to supply the mill for one month. The tramming is done with horses and cars, and the rock is hoisted by three 10-ton hoists to the crusher and carried to the mill on a belt conveyor. The floor of the quarry has an even surface, and tracks are not required for the cars.

A new concrete building, 26 by 70 ft. and 84 ft. high, has been completed and is to be used as a crushing plant.

The rock will be loaded in cars with a steam shovel and hauled to the foot of an incline by two 6-ton Plymouth gasoline locomotives, then taken up the incline by a hoist driven by a 40-h.p. motor, and dumped into the crusher. The latter is a 48 by 60 Traylor jaw crusher with a capacity of 500 tons per hour, driven by a 200-h.p. motor, and crushes to 6 inches. The product from the crusher passes through a No. 7 Mammoth Williams Hammer mill and is carried to the storage bins on a 36-inch belt conveyor.

About 30 men were employed in the quarry during the year.

The officers of the company are: Geo. H. Gooderham, president; Mark Irish, secretary; J. G. Lind, manager.

Standard White Lime Company.—This company, with headquarters at Guelph, operates quarries at Beachville, St. Marys and Guelph. The largest plant is located at Beachville, where the company has two quarries. The main quarry is about 700 feet long and 70 feet wide, with a face of 21 to 30 feet, from which shipments are made to the blast furnaces at Hamilton and the American Cyanamid Company at Niagara Falls. The rock from the other quarry at Beachville is used in making white lime in the kiln, which has a capacity of 50 tons per day. A new bridge was built across the Thames river in 1918 over which the cars are hauled to the kiln. At this plant 55 men are employed.

The works at Guelph have three kilns, only two of which were operated during 1918, with a daily capacity of 10 tons each. At this plant hydrated lime is produced; lump lime is also shipped. Ten men are employed.

At St. Marys one kiln was operated for eight months. The quarry has a face of 21 feet and drilling is done by hand. The rock is hauled to the kiln in carts. Eight men are employed.

The production of the company for the year was as follows:

Beachville:

Lump lime	7,588 tons.
Stone	70,314 "

Guelph:

Hydrated lime	1,397 tons.
Lump lime	1,095 "

St. Marys:

Lump lime	12,078 tons.

D. D. Christie is president; J. Kennedy, Guelph, manager.

The Toronto Lime Company.—One kiln, situated at Dolly Varden, near Georgetown, was operated by this company during 1918. The quarry has a face of 28 feet. The company has four kilns.

The plant at Limehouse was shut down during the year.

The officers of the company are: F. S. Brown, president; W. L. Scott, secretary-treasurer; W. Gowdy, Limehouse, superintendent; the head office is at 26 Queen St. East, Toronto. About nine men were employed.

Toronto Plaster Company.—This company operated at Teeswater for eight months during 1918.

The quarry has a face of 35 feet and is 40 feet wide. The rock is hauled on an incline to the kilns, and, after being burned, is carried by a belt conveyor to the de-hydrating plant. The production during 1918 was 77,114 bushels of hydrated lime, the only form in which the product is shipped.

Power is supplied to the main engine and drills by two steam boilers with a total capacity of 210 horsepower. Thirteen men were employed.

The officers of the company are: president, John Kennedy, Guelph; vice-president, H. W. Calkins, Toronto; secretary-treasurer, D. E. Kennedy, Teeswater.

Wentworth Quarry Company.—The Wentworth Quarry Company, at Vinemount, near Hamilton, operated their limestone quarry continuously during the year, but the crushing plant was running for about nine months only.

The quarry covers an area of 8 acres, and has a face of 16 feet. Drilling is done by one cyclone drill driven by a gasoline engine. The rock is loaded by two steam shovels into 4-ton cars and hauled up an incline to the crushers. A gas-producing plant supplies the power to two crushers and a set of rolls. The rock is crushed to sizes from ¼-inch to 3-inch, and is used for building and road material.

About one-half of the production is used in Toronto for building purposes. Sand is also supplied from the rolls for the manufacture of fertilizer.

The plant has a capacity of about 45 tons per day.

The officers of the company are: William Martin, president; James Thompson, secretary. S. Schwendiman, of Vinemount, is manager, employing an average of 18 men.

Brickyards

Don Valley Brick Works.—The plant of the Don Valley Brick Works in Toronto was operated at reduced capacity during the year 1918.

The material is taken from three pits, the lowest one being in Hudson shale with a face of 70 feet. This is worked in benches of 8 feet and hauled to the surface by an inclined tram.

The second pit has a face of 65 feet, and the clay is loaded into cars by a steam shovel and trammed to a pulverizer by horses. The level of this pit is slightly above the presses.

The third pit has a face of 35 feet; the clay is loaded into cars by a steam shovel and trammed to the gravity incline and lowered by hoist. The second and third pits are in Erie clay.

During 1918 pressed brick, stiff and mud brick and hollow ware were manufactured.

The plant is operated by the Executors of the Robert Davies Estate. John Bowman is general manager, and William Burgess superintendent; an average of 85 men were employed.

Interprovincial Brick Company.—The plant of this company, situated one mile south of Cheltenham, was working continuously during the year 1918. The production was 20,000 bricks a day, which is only one-half the capacity of the five kilns.

The quarry is 450 feet long and has a face of 25 feet, from which the clay is hauled to the crushers on an incline by an electric hoist. Red, buff and fire-flash brick are manufactured.

Plans have been drawn for a large extension to the plant, only part of which may be built in 1919.

The officers of the company are: A. O. Dawson, Montreal, president; E. G. Glenn, Toronto, secretary; F. B. McFarren, manager; K. Stillwaugh, superintendent. About 20 men were employed.

John Price, Limited.—The plant of the John Price brick works on Greenwood Avenue operated throughout the year, producing six and a half million bricks.

George Price is manager, employing 42 men.

Milton Pressed Brick Company.—The Milton Pressed Brick Company manufactured brick throughout the year at the plants situated about two miles west of Milton. No. 1 plant has a total capacity of 180,000 bricks per day, but did not require to work to full capacity to supply the demand. Red and buff brick and rough texture of all colours are manufactured.

No. 2 plant, situated about half a mile farther west, was also operated during the year. Its capacity is 20,000 bricks per day. Both quarries have a face of 60 feet of Medina shale.

The officers of the company are: J. S. McCannell, Toronto, president; A. W. Holmsted, Toronto, secretary.

C. E. Hill is manager, employing an average of 130 men.

Standard Brick.—The plant of the Standard Brick Company on Greenwood Avenue worked from May 8th to October 8th, 1918, producing 2,300,000 red bricks; about 25 men were employed.

G. J. Steel is president, and Charles Bulley is secretary-treasurer and manager.

Sun Brick.—The plant of the Sun Brick Company was operated continuously during 1918, partition and building tile and about 200 tons of chimney blocks being manufactured. The daily production of tile averaged 20 tons. The pit has a face of about 45 feet, and hoisting is done by steam derrick. Forty men are employed.

The officers of the company are: president, Henry M. Pellatt; secretary-treasurer, G. A. German; sales office is at 32 Toronto St., Toronto.

A. H. Wagstaff.—The plant of A. H. Wagstaff, brick manufacturer, was in operation for five months during the summer of 1918, the daily production being 19,000 bricks.

A. H. Wagstaff is manager, employing 25 men.

York Sandstone Brick.—The plant of the York Sandstone Brick Company, Toronto, was in operation from May 4th to December 20th, 1918, manufacturing 3,180,000 sand and lime bricks. The pit has a face of 25 feet, and the sand is carried to the press by a 15-inch belt conveyor driven by a 15-h.p. electric motor. Fifteen men are employed.

Alexander McCurdy is president, and Thomas J. Smyth secretary-treasurer and general manager.

York Sand and Gravel.—The York Sand and Gravel Company of Toronto operated from April 3rd to the end of the year 1918. The material is loaded in cars by a clam-shell bucket operated by steam, and hauled by a locomotive to the screens. The product from the screens drops into the railway cars on the siding. The face of the quarry is 30 feet. Nine men are employed.

Emma Ryan is president, and Frank Ryan secretary-treasurer and general manager.

VI.—SMELTING AND REFINING WORKS

Blast Furnaces

Algoma Steel Corporation.—At the plant of the Algoma Steel Corporation, at Steelton, there are now four blast furnaces: Nos. 1, 2, 3 and 4, of 300, 300, 500 and 400 tons capacity respectively. No. 1 furnace ran during all of 1918; since November it has been making spiegel at the rate of 140 tons a day. No. 2 furnace was in blast except from May 6th to June 23rd, 1918. No. 3 furnace was idle until October 22nd and was blown out on January 20th, 1919. No. 4 was originally a 275-ton furnace in use at the Midland smelter. It was moved to Steelton, enlarged to 400 tons capacity, and blown in March, 1918. During the greater part of the year the furnaces ran on basic pig, but some foundry pig and spiegel were also made.

Two Daniel Adamson steam turbines, with a blowing capacity of 20,000 cubic feet each, have been added.

The Greenawalt sintering plant has been moved to a point west of the blast furnaces. It contains three pans 7 ft. by 12 ft. Each pan is connected to a Greenawalt exhaust fan driven by a 75-h.p. motor. During 1918 blast-furnace flue dust was sintered, the capacity of the plant being from 130 to 140 tons of product per day. Twenty men are employed.

A calcining plant has been in operation since August, 1916, for the burning of limestone and dolomite. The calciner is a 125-foot steel rotary kiln, 7 ft. in diameter at the upper end, and 7 ft. 6 in. at the lower. The firing is done by means of coke-oven gas. Dolomite is obtained from the Ozark quarry near Trout Lake station, Michigan, and when calcined is used for lining the bottoms of the reverberatory furnaces.

In August, 1918, the manufacture of various shapes of silica brick was begun. Quartzite from the McPhail and Wright quarry, at Bellevue, Ont., is used. Two coal-fired kilns have been built with a capacity of about 85,000 bricks each.

The officers of the company are: president, W. C. Franz; vice-president and general manager, David Kyle; vice president and comptroller, James Hawson; secretary, A. Taylor; treasurer, E. W. Shell; directors: W. C. Franz, J. Frater Taylor, R. Home Smith, Herbert Coppell, Joseph S. Dale, Frederick McOwen, A. Taylor, James Hawson, David Kyle, H. I. Underhill, W. Cunningham, Sidney Mason, H. C. Coleman, W. K. Whigham; smelter superintendent, J. H. Bell; metallurgical engineer, John M. Knote; superintendent, Greenawalt plant, V. H. Taylor; superintendent, silica-brick plant, C. W. Desing.

Canadian Furnace Company.—The blast furnace at Port Colborne operated at full capacity during the year, with the exception of a few days' interruption in the early part of the year due to a shortage of coke.

The two large ore bridges were rebuilt during the year, but no additions were made to the plant. The adjoining property, which belonged to the Cronmiller and White Brewery Company, was purchased, which will give an additional 1,000 feet of frontage on the lake.

Plans have been made for erecting a building 40 feet by 30 feet for the convenience of the employees. It will contain shower baths, lockers, washrooms and a rest-room.

The production for the year was 98,154 tons of pig iron: 150 men were employed.

The officials of the company are: Frank B. Baird, president; Harry Yates, 1st vice-president and treasurer: C. A. Collins, 2nd vice-president; F. C. Slee, secretary; B. Marron, manager: F. E. Deschenes, superintendent; H. J. Higgins, mechanical superintendent. The head office of the company is at 51 Hamburg St., Buffalo, N.Y.: the works office at Port Colborne.

Midland Iron and Steel Company, Limited.—This company in 1918 took over the works of the Canada Iron Corporation at Midland, and began the production of pig iron October 10th, 1918.

The company is capitalized at $1,000,000, divided into 10,000 shares of a par value of $100. The officials of the company are: James Playfair, president and general manager: D. S. Pratt, treasurer: M. E. Tully, secretary: E. Heist, superintendent of works. The directors are: Jas. A. Paralgy, Cleveland; E. L. White, Midland: V. J. Hughes, Montreal: C. K. Quinn, Duluth. The head office is at Midland.

The 275-ton blast furnace was sold by the old company to the Algoma Steel Corporation at Sault Ste. Marie. The 90-ton furnace was rebuilt by the new company, and now has a capacity of 135 to 150 tons of pig iron per day.

The iron ore and coke and part of the limestone are imported from the United States. Some limestone is obtained from the Company's quarry near Longford. An average of 140 men are employed.

Parry Sound Iron Company.—The Parry Sound Iron Company, Limited, was incorporated in July, 1918, with a capitalization of 20,000 shares of a par value of $100 each. Colonel J. A. Currie, of Toronto, is president of the company. This Company has taken over the plant of the Standard Iron Company at Parry Sound, and is operating the iron blast furnace at this place. The furnace has a capacity of 125 tons of pig iron per 24 hours and was blown in on January 22nd, 1919.

Iron ore is imported from the American side, though an effort may be made to use some of the bog iron ores of the district. Limestone for flux is obtained from the Ontario Stone Corporation at Uhthoff, near Coldwater Junction.

W. I. MacTavish is assistant superintendent, employing about 80 men. The first operations were confined to the production of foundry pig.

Standard.—The Standard Iron Company, Limited, worked the Deseronto blast furnace in 1918, making coke pig-iron. Charcoal pig was formerly made at

this furnace, but in 1918 charcoal was not available. About equal quantities of Moose Mountain and Mesabi ores were used. Seventy men were employed.

The officers of the company are: president, R. J. Mercer, Montreal; secretary-treasurer, S. F. Belknap, Montreal; superintendent, O. O. Laudig, Deseronto; assistant superintendent, J. J. Dunn, Deseronto. The head office is 318-321 Coristine Building, Montreal.

Steel Company of Canada.—The blast furnaces at Hamilton operated continuously throughout the year. Two furnaces of 200 and 250 tons per day capacity supply foundry iron to the market in addition to supplying the steel mills.

Since the heavy demand for war material has ceased, plans have been prepared for relining the larger furnace in 1919.

The officers of the company are: Robert I. Hobson, president; R. G. Wells, general superintendent; Chas. Grimes is superintendent of the blast furnace department, employing an average of 190 men.

Tivani.—The Tivani Electric Steel Company, Limited, made a low-phosphorus, high-carbon pig from steel turnings at Belleville. Work was discontinued in January, 1919. Sixteen men were employed.

The officers of the company are: president, J. W. Evans, Belleville; vice-president, R. F. Ketcheson, Belleville; manager, Jas. Wallace, Oakville.

In March, 1919, W. M. Goodwin and G. Cadenhead, of Kingston, rented the plant and proceeded to carry on some experiments on titaniferous magnetites to save the vanadium content and produce a vanadium steel. Ten men are now employed.

Refineries

Coniagas Reduction Company.—The refinery at Thorold was operated during the year on the reduction of the silver ores from the Cobalt mines. The products and manner of treatment were the same as in the previous year. Considerable experimenting was done with the Cottrell installation to increase the production of arsenic from the smelter fumes. There is now a total transformer installation of 450-k.w. on the motor load and 180-k.w. on the electric furnace.

The officers of the company are: R. W. Leonard, president and general manager; R. L. Peek, superintendent; J. J. Mackay, secretary; 162 men are employed. The head office is at St. Catharines.

Deloro Smelting and Refining Company, Limited.—The smelting and refining works of this company at Deloro, Hastings county, operated to full capacity during 1918, treating about 450 tons of ore and concentrates per month.

The production of stellite was increased to meet the demand of the munition factories, the monthly production being about 21,000 lbs.

A one-storey building, 50 by 150 feet, was constructed for the extension of the metals department. Plans have been completed for the manufacturing of "festelite" to be supplied to the Canadian and European markets for the manufacture of cutlery.

The officers of the company are: M. J. O'Brien, president; Thomas Southworth, vice-president and managing director; S. B. Wright, general manager;

S. F. Kirkpatrick, consulting metallurgist: F. A. Bapty, secretary-treasurer.

Two hundred and fifty men were employed during the year.

Metals Chemical, Limited.—The refinery at Welland was operated during the year on residues from the Cobalt mines, the greater part of which were purchased from the Nipissing Mining Company. Such residues had been shipped to Germany previous to the war, but after active research at this plant means were devised to recover a full series of nickel and cobalt products. The works are now making nickel oxide, nickel sulphate, nickel carbonate, nickel ammonia sulphate, nickel nitrate, metallic nickel, cobalt oxides (black and grey), cobalt hydroxide, cobalt sulphate, cobalt carbonate, cobalt acetate, cobalt arsenate, bar silver and metallic cobalt. They also manufacture an arsenic compound which is used as a weed killer, and is purchased largely by the railway companies of Western Canada.

During the year a new Wedge furnace was installed, with a capacity of 45 tons of ore per day.

J. S. Gillies is president, and J. H. Charles secretary-treasurer and general manager; 130 men are employed.

Nickel Refining Plant

One of the most important developments in the home refining of metal-bearing ores, and one for which there had been a long-continued and insistent popular demand, was the establishment of a plant for producing nickel and copper from the Sudbury mattes. In July, 1918, the International Nickel Company of Canada Limited, completed a magnificent refinery of this kind at Port Colborne, on the northern shore of lake Erie, of which a good description has been published[1] by W. L. Wotherspoon, consulting engineer of the above company. It is herewith reproduced.

The increased demand for nickel products caused the International Nickel Co. to decide, late in 1916, to proceed with the construction of a refining plant in Canada, of sufficient capacity to meet the nickel requirements of the British Empire. An extensive examination of numerous sites was conducted, and it was decided to erect the refining works at Port Colborne, Ontario. Port Colborne is situated on the shore of Lake Erie and is about 20 miles due west from Buffalo. The Welland canal, connecting Lake Erie with Lake Ontario, passes through the town.

The works site consists of 330 acres and has a frontage on Lake Erie of about a mile. This frontage immediately adjoins that of the Canadian Furnace Co., and is somewhat to the eastward of the entrance to the canal. In addition to the acreage mentioned, the company acquired extensive water rights on the lake front and convenient to the canal basin, where there is a deep-water frontage, to meet the requirements of lake transportation. Railroad facilities are provided by the Grand Trunk Ry, a branch line of which passes the north boundary of the refinery site.

The site is almost level, and about 8 ft. above the lake, except along the shore, where sand dunes about 300 ft. wide and 30 ft. high have been formed by wind. The ground consists of 1 to 2½ ft. of peat, on top of 1 to 10 ft. of blue clay, which lies directly on a limestone bedrock, which provides excellent foundations.

There are, in all, 31 buildings of steel-and-brick construction, plans for which were begun in October, 1916. The land was so near the high-water elevation of the lake that the area to be occupied by the buildings and streets was raised about 3 ft., sand being obtained from the dunes by steam shovels and spread over the site, this work following the clearing of trees and brush and the removal of peat. Foundations of all buildings and equipment were carried down to bedrock, and were built, to a great extent, in winter under severe climatic conditions, when the temperature was frequently 10 degrees or more below zero.

[1]Eng. and Min. Jour., N.Y., March 8, 1919.

International Nickel Company of Canada, Port Colborne—Nickel room interior.

The plant was designed with a view to securing maximum efficiency, by the introduction of mechanical and metallurgical apparatus, and was arranged to reduce the labour required for operation to a minimum. All equipment is of permanent character, so that charges for maintenance will be as small as possible. The buildings are of steel frame and brick walls. The roofs are of special wood construction, and are covered with Johns-Manville salamander roofing.

The design of the works provided for a complete power plant, a water-supply system, a separate sewerage scheme for storm water and sundry drainage, an electric-conduit distribution system for power and lighting, as well as piping systems for steam, oil and compressed air. All piping and cables are carried underground so that there are no obstructions between the buildings.

The various units of the plant are served by both standard-gauge and narrow-gauge railroad tracks for facilitating the unloading and handling of materials.

The water supply is obtained through a 4-ft. square concrete conduit, over 3,000 ft. long, extending from the Welland canal to the centre of the plant, under the power house. This conduit was built in a trench blasted out of the solid rock, so that a gravity supply of water, up to 50,000,000 gal. per day, can be obtained. This system made it possible to place all pumps in connection with the water supply in the basement of the power house, giving important advantages of control.

The area of the works site between buildings has been graded so as to provide adequate means for the disposal of storm water. A series of sewers, connecting with large trench ditches excavated through the property, has been arranged, the water finally discharging through a concrete culvert which passes through the sand dunes into Lake Erie. The sanitary pipe service flow is at such a low level that an ejector-chamber pumping station is provided, from which sewage is discharged to a disposal plant situated in the sand dunes. This plant is constructed on the activated sludge process, which provides for the aëration and clarification of sewage, resulting in an effluent free from objectionable matter. This sewage plant is the only one of its kind in the district, and was installed on the recommendation of the Provincial Board of Health of Ontario.

Several change houses have been provided, supplied with modern lockers, shower baths, and other improvements. A hospital, in a detached building, has an examination room for the reception of patients, for the administration of first aid, and a completely equipped operating room with sterilizers and other modern appliances. Particular attention was paid to this department, the nearest hospital being at Welland, six miles away.

The question of comfort and health of the employees has been given every consideration. A staff house is provided for the employees and a clubhouse for the accommodation of the unmarried men and executive heads. The clubhouse contains both residential and recreation facilities, and both buildings are situated at the entrance to the works, amid the pleasant surroundings of well-laid-out lawns, flower beds and shrubs. The chief officials have houses of attractive design which were built by the company, to the west of the canal in the main residential district of Port Colborne.

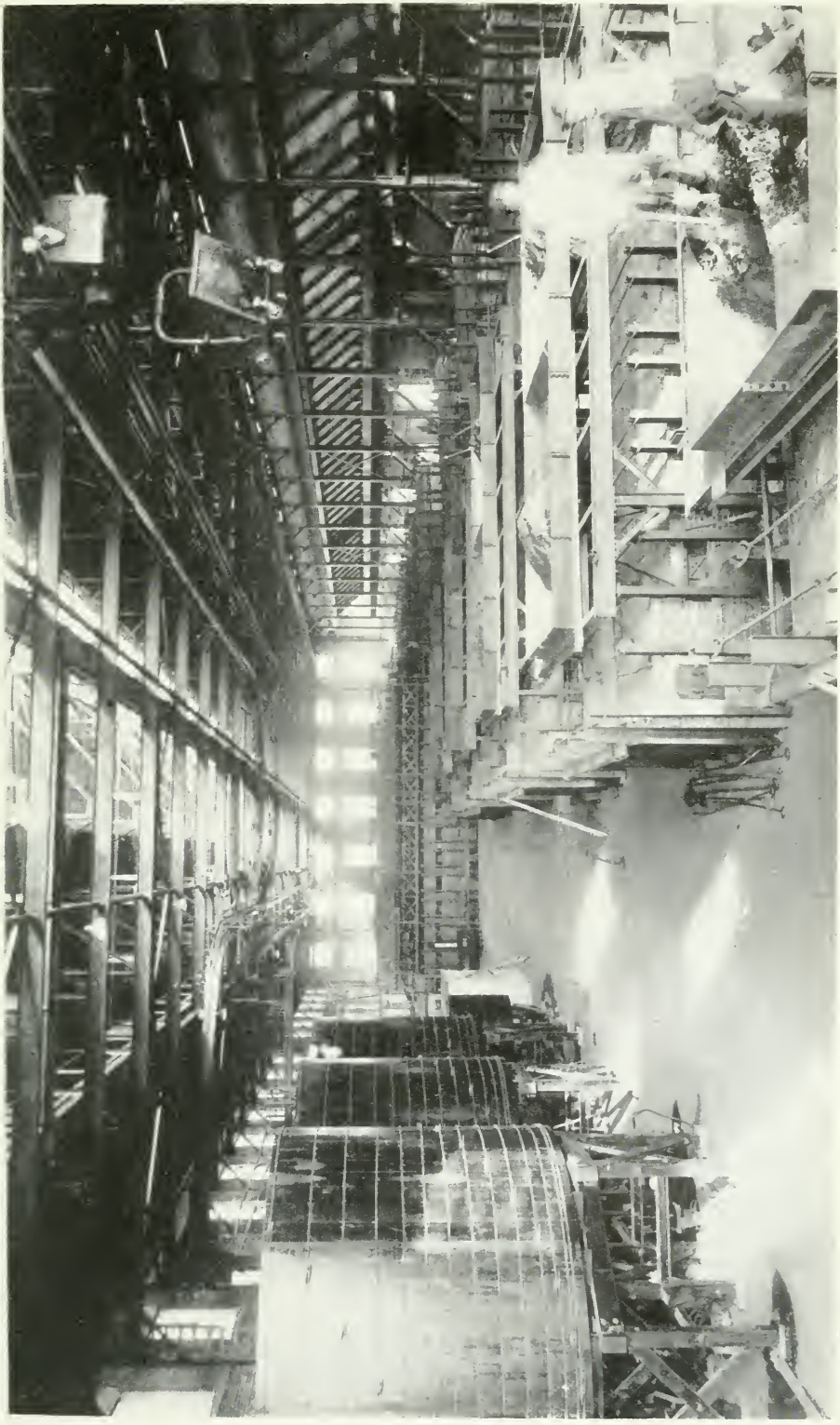
The largest process building is 746 ft. long and 125 ft. wide, divided into two bays, and containing the major portion of the heavy machinery and metallurgical equipment, among which are three cupolas, three reverberatory furnaces, two slag furnaces, and three converters. Here the matte received from the smeltery at Copper Cliff undergoes initial treatment. The method of handling the raw materials is of interest. Matte, coke, and fluxes are brought in on an elevated trestle of reinforced concrete. This trestle connects with bins of similar construction at the back of the process building, and is of sufficient strength to take standard railroad equipment. The materials are dumped from the cars into the various bins, from which they are drawn at the main floor, where arrangements are made for making up and weighing the furnace charges.

The matte, which consists of 55 per cent. nickel and 24 per cent. copper, is smelted with salt cake, the nickel separated and the copper bessemerized in 84 by 126-in. Allis-Chalmers converters. Electric tilting gear is used, and the converters are controlled from a pulpit conveniently situated across the aisle. One 50-ton, one 35-ton, two 20-ton, and two 5-ton cranes are installed in this building, all of which were manufactured by the Dominion Bridge Co., of Montreal.

Among other machinery of special interest are three electrically driven direct-connected turbo-blowers of 7,500-cu.ft. capacity and 20-oz. pressure. These are used for cupola service and were furnished by the Rateau-Battu-Smoot Co. of New York, and are situated in an annex to the main building where good light, accessibility and cleanliness are easily obtained.

Flues for the various furnaces are arranged to insure minimum heat losses and obstruction in the building, and are jointly connected to a concrete chimney 350 ft. high and 12 ft. at its smallest diameter. One of the most modern Cottrell electrostatic precipitation plants for the treatment of flue gases is provided, consisting of seven treaters, conveniently placed in relation to the main flue so that any portion or all the gases can be subjected to the process, or discharged directly to the base of the chimney.

Among other process buildings are those devoted to leaching and roasting, the former



International Nickel Company of Canada, Port Colborne—Men shovelling in nickel room.

part of the process being carried out in a structure 420 ft. long by 90 ft. wide. The roof trusses span the entire width of this building, so that the whole area is free from columns.

Ball mills are used for reducing the nickel sulphide previous to its being chemically treated in concrete tanks, which occupy the major portion of the area of this department. These reinforced-concrete tanks are elevated about 3 ft. from the floor, and, on account of the nature of the product handled in them, were cast at one pouring. The supports, post girders, and sides of the tanks are made in one monolith, without construction joints, for the length of 150 feet.

Special attention was paid to lighting and ventilation in this department, and the handling of materials is carried out mechanically by means of an overhead telpher system arranged to reach all parts of the building, together with electrically driven distributing machines for charging the tanks. To facilitate the handling of the product between the leaching and roasting departments, these are connected by three overhead bridges, the overhead telpher system being arranged for service in both departments. Weighing sections are provided at these overhead bridges to facilitate the quick and accurate determination of the quantities of the products handled.

The building in which the roasting furnaces are installed is 380 ft. long, 110 ft. wide, and has one clear span of 90 ft. in which the 10 mechanical and hand-calcining furnaces were installed. Extending the entire length of the building is a space of 20 ft. used for a reinforced-concrete overhead coal bunker. The coal is received on standard railroad cars and dumped in a hopper below the track outside the building, from which it is fed, by a reciprocating gate feeder, to a coal crusher. After being reduced in size, it is hoisted with a bucket elevator and discharged to a belt conveyor extending the entire length of the coal bunker. A travelling tripper is provided to unload the belt at any desired point.

The flues from the roasting furnaces are carried below the floor level and connected with a large dust chamber of the wire-hung type. This dust chamber is 300 ft. long by 60 ft. wide and is divided, lengthwise, by a centre wall, to form two large flues, each of which is nearly 30 ft. wide and 24 ft. high. The bottoms of the flues are of concrete, and the top is of brick arch construction sprung between steel crossbeams. Crosswalls, 8 ft. high, are provided every 32 ft. of the length of the dust chamber, thus making a series of pockets.

The entire area of the dust chamber is hung with wires placed on 4½-in. centres, 500 miles of wire being used for this purpose. The wires are suspended on special frames, which are, in turn, connected with an operating device outside the chamber, conveniently arranged so that the dust caught can be periodically precipitated. The dust collects in the pockets previously described, access to which is provided by steel doors which permit the use of small cars for handling the product. The flue gases, after passing through the dust chamber, are discharged into the base of a concrete chimney of the same size and construction as that already described in connection with the main process building. It may be added that these concrete chimneys were built by the General Concrete Construction Co., and, although heavily reinforced, are designed as gravity chimneys for a wind velocity of 100 miles per hour. They are lined throughout with fire brick and have terracotta caps; the design of the base called for extra heavy construction, owing to the large number and area of the flue entrances.

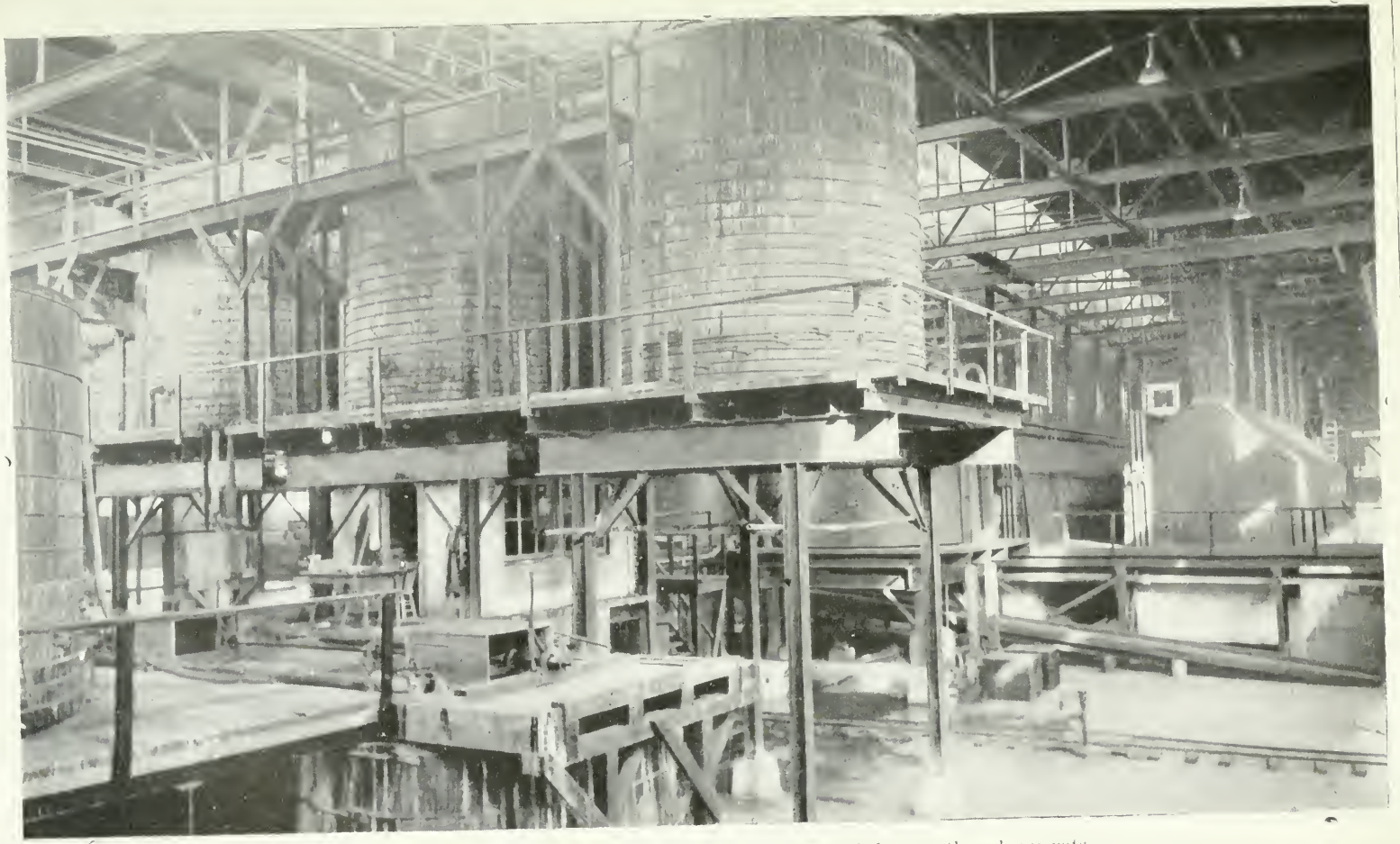
The nickel-refinery department received particular study in connection with the working out of the details of equipment and the arrangement of the installation. One part of the building is used for the storage of chemicals and other products, and contains an elaborate system of bins, and measuring and weighing devices, for the preparation of furnace charges to go to the nickel-refining furnaces, which are in the main portion of the building. These furnaces are of special design, owing to the high temperatures which exist under the operating conditions desirable. They are equipped with oil burners, and a special grade of fuel oil is used.

The power plant shows evidence of careful planning, and the design indicates that future conditions have been anticipated. The equipment at present installed provides for ample plant extension, and space has been reserved for future enlargement of the boiler house and turbine room. The building is of the usual brick, steel, and reinforced-concrete power-house design.

The main power-house boiler room contains four Babcock & Wilcox standard water-tube boilers, each of 4319 sq. ft. heating surface, set in two batteries. These boilers are built for a working pressure of 160 lbs. per sq. in., each being fitted with B. & W. superheater, which raises the temperature of the steam about 100°. B. & W. chain-grate stokers are also a feature of the equipment.

Two B. & W. boilers of special design are installed for utilizing the waste heat from the reverberatory furnaces in the nickel refinery. These boilers are built for an output of about 400 boiler horse-power each, and are of particular interest, as their design represents the latest development in this phase of engineering, resulting from extensive investigations by the Babcock & Wilcox Company.

Coal is received from the cars in a track hopper, crushed in a Jeffrey crushing roll, elevated, and conveyed overhead to a suspended bunker, from which it is fed as required to



International Nickel Company of Canada, Port Colborne—Nickel room, three large vats.

the stokers. The ashes are removed from the ash pits by ash cars running in an underground tunnel to the elevator and ash-storage bin, from which they are dumped into cars for removal. One 6 x 175-ft. reinforced-concrete chimney conveys the products of combustion from the boilers in the power house. The waste-heat boilers are served by two 5 x 100-ft. reinforced-concrete chimneys.

Two Ridgway-Rateau high-pressure turbines furnish power for the direct-connected d.c. generators, each of 1,000-kw. capacity. These turbines operate under 150-lbs. initial steam pressure and 28-in. vacuum and run at 1,700 r.p.m. The power house also contains two other turbo-driven high-pressure blowers, which supply air for the converters. Like the turbo-generators, these units are of Ridgway-Rateau make. The turbo-blowers are each of 15,000-cu. ft. capacity, and deliver air at 15-lbs. pressure. They are connected in high-pressure condensing turbines operating at 8,500 r.p.m. and were designed by the Rateau-Battu-Smoot Co., of New York.

The superseding of the reciprocating engine by the turbine in large power plants has facilitated the elimination of the cumbersome blowing engine. The high rotating velocities obtainable to-day are especially suitable for the operation of centrifugal blowers, and the turbo-blowers at this plant are much more economical of space than blowing engines of similar capacity would be. The impellers are built up around a large-diameter shaft with dovetail radial slots milled in it. The impeller blades are of nickel steel and tapered in section, being much thinner at the tip than at the root, and are driven into these slots. Distance pieces are inserted between the blades in several stages. All turbines are equipped with Frahm tachometers, supplied by James Biddle, of Philadelphia.

Two No. 7 Westinghouse LeBlanc jet condensers, with individual air and circulating-water pumps, serve the turbo-generators. Each unit is fitted with a 31-h.p. steam turbine, and a reduction gear for the pump drive. These condensers are each capable of handling 17,500 lbs. of condensate per hour, and maintain a 29-in. vacuum with 40° cooling water. For the turbo-blowers, two similar No. 5 units are installed. They are fitted with 21-h.p. steam turbines, and are capable of handling 11,000 lbs. of condensate per hour at 29.05-in. vacuum with 40° cooling water.

The main switchboard supplies the plant with direct current at 250 volts. Lighting and other 110-volt services are supplied by means of a three-wire service, operated by two 20-kw. motor-generator balancing sets. I. T. E. circuit breakers, Weston indicating ammeters, and Sangamo wattmeters are installed on the generator and feeder panels.

The feed water is heated by exhaust steam from the various plant auxiliaries in Webster-Lea units. The heaters were supplied by Warren Webster & Co., of Camden, N.J., and the Lea meters by the Yarnell-Waring Co., of Philadelphia. Two units were installed, one for 5,000 h.p., equipped with Lea recorders and having a capacity of 275,000 lbs. per hour, and the other similar in construction to the first, having a capacity of 1,500 h.p., or 100,000 lbs. per hour. Both are of extra heavy construction, and were designed to withstand a back-pressure of 10 lbs. per square inch.

A two-inch Venturi meter measures all feed water, and the feed pumps are of Lea-Courtenay make, direct-connected to Terry steam turbines of standard type. Owing to the provision for the horizontal parting of the casing when necessary, the interiors are easily accessible for repair; and, as no oil comes in contact with the steam, an oil separator is unnecessary.

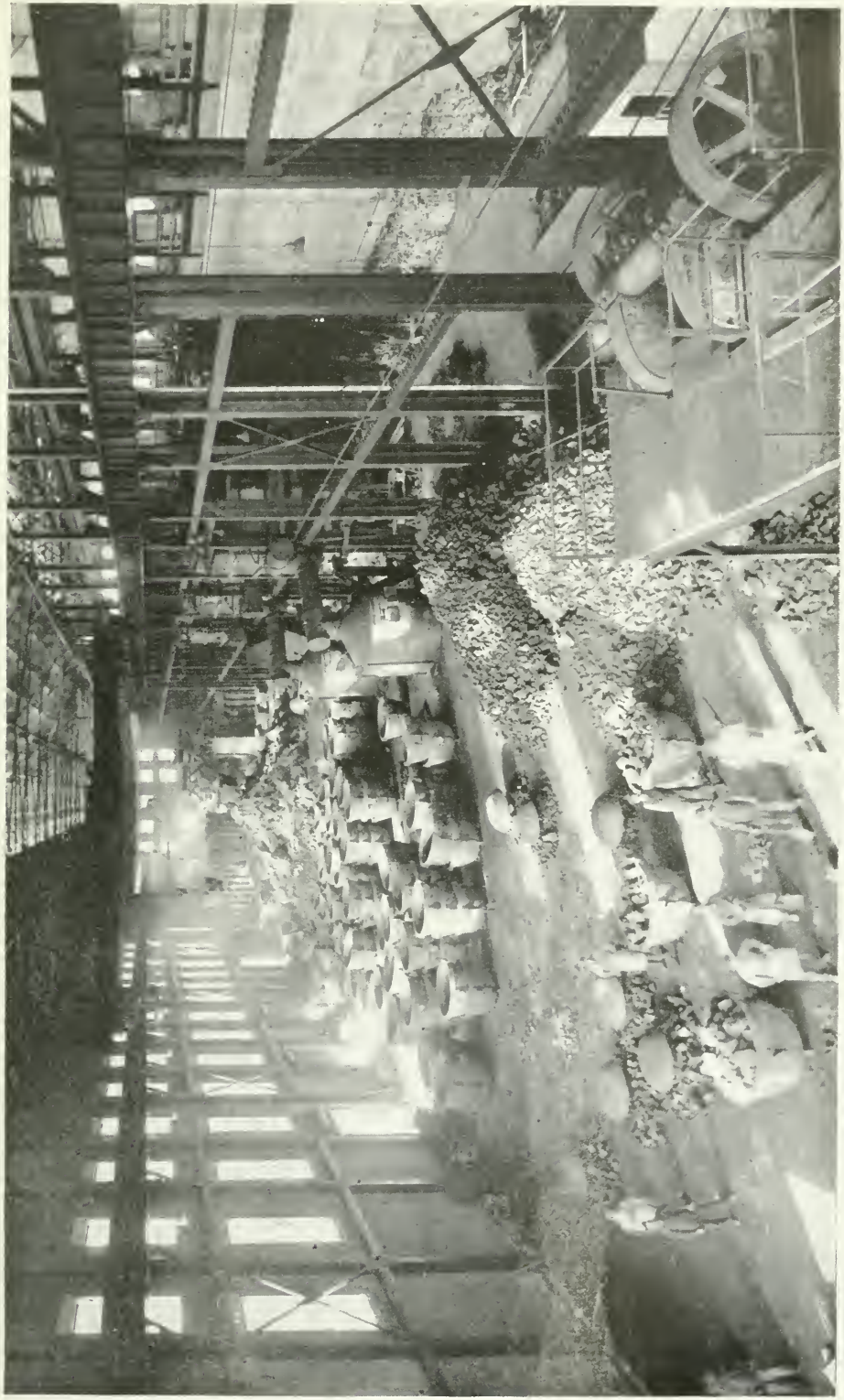
In a plant of this size facilities for repairing machinery are not only advisable but necessary, and ample provision has been made. The machine shop is of good size, and has space to contain a large amount of equipment. Although the installation is not fully complete, and all of the machinery is not yet installed in permanent position, a good idea of equipment may be gained from a description of the various units.

A 12 and 28-in. McKabe double-spindle lathe, with a 24-ft. bed, is provided for the heavy turning, and a Willard engine lathe serves for the finer and smaller repair jobs. A Hamilton drill and a Niles-Bement-Pond radial drill are also provided. A Bertram double punch and shear, a Kelley shaper, and Racine hack saws form part of the equipment. The machine-shop building is about 175 ft. wide and 200 ft. long, with two side bays and a centre aisle for a crane runway, and it also serves to house the forging equipment and a complete electrical repair shop. All repairing work is done here. Armatures and field coils are rewound, and a complete stock of repair parts is kept on hand.

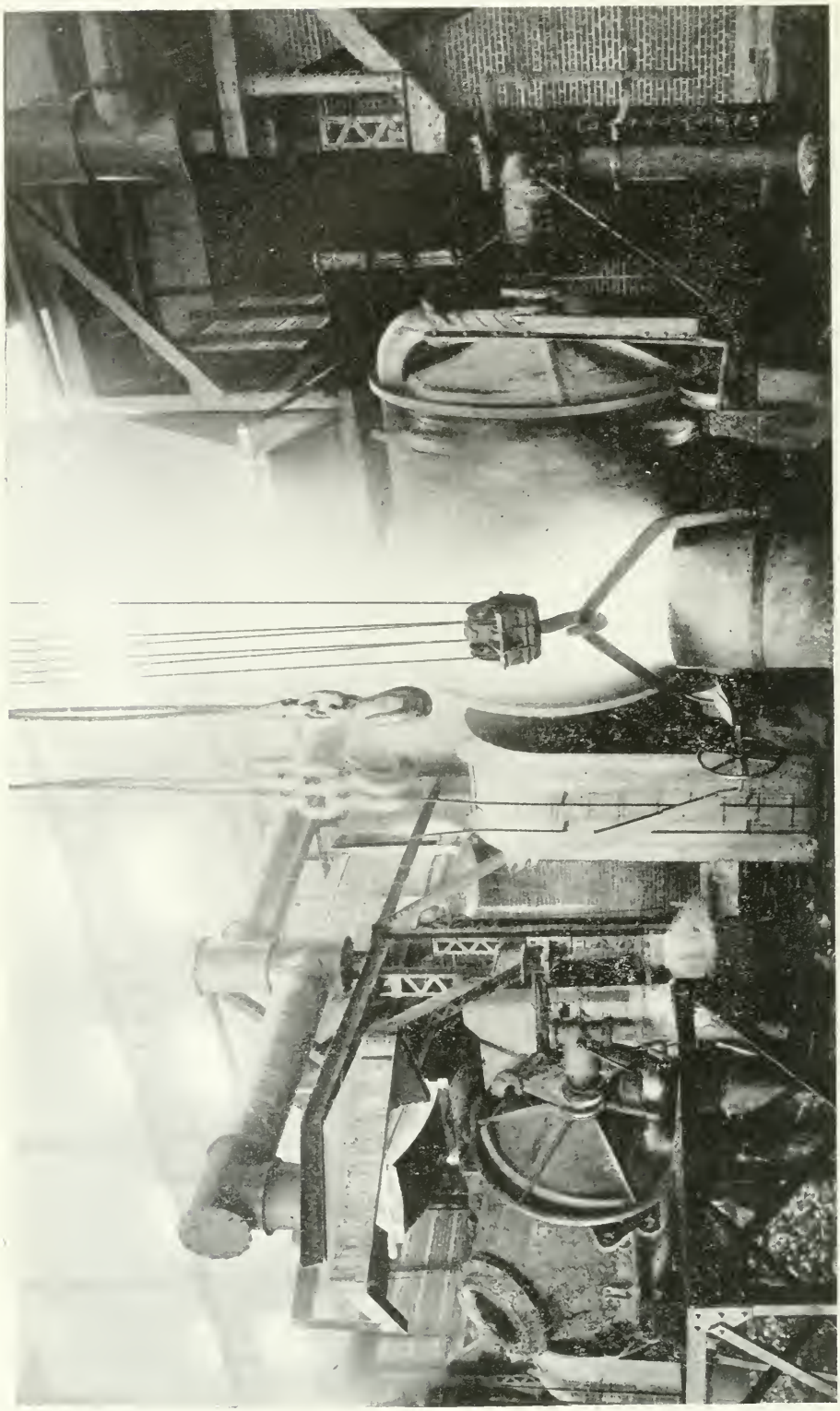
A separate building houses a carpenter shop, which also serves as a cooperage in which all the barrels required for shipment purposes are assembled.

In a plant of this magnitude it is wise to make adequate provision for the workmen's health. The sanitary features indicate that a considerable amount of care and thoughtfulness has been given to the question.

All water used in the plant is chlorinated, not only the drinking water, but that used in plant operations as well. The water supply is obtained through a 4-ft. square intake from the Welland canal, and is passed through the pumps and chlorinated, and then goes to an elevated tank, where time is given for its complete purification. Mention has previously been made of the sewerage system.



International Nickel Company of Canada, Port Colborne—Bird's-eye view of casting room.



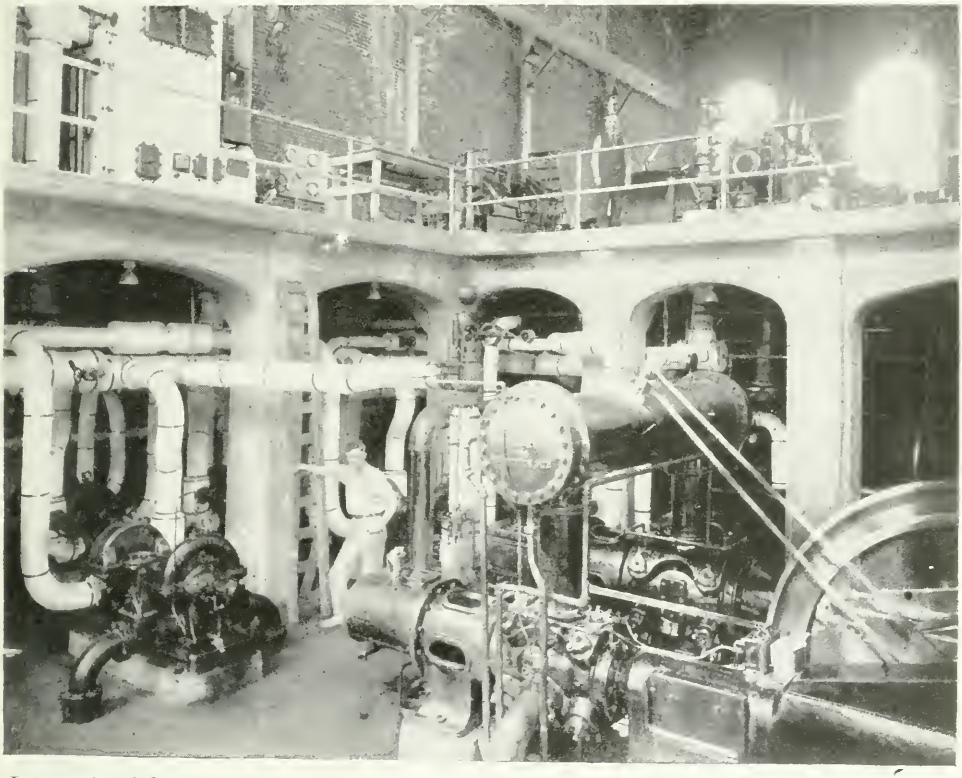
International Nickel Company of Canada, Port Colborne—Pouring molten blister copper into casting ladle after separation from nickel.

For workmen engaged in laborious occupations, provision must be made for the changing of wet and dirty clothing, and the donning of comfortable and warm apparel for street wear. Four change houses have been built, with a total of 600 lockers and with hot and cold showers and lavatory accommodations.

The Port Colborne refinery began operations last June, and when at full capacity will be capable of a yearly production of about 15,000,000 lbs. of nickel and 8,000,000 lbs. of copper.

The engineers responsible for the installation have given special attention to the design and construction of the plant and to the possibilities of expansion, and have arranged the equipment in such a way that additions to machinery and equipment can be made in an efficient manner.

The plant was built at a cost of over $5,000,000. The result impresses the visitor and makes him feel that not only is Canada—and Ontario in particular—to be congratulated on the introduction of nickel refining upon a permanent basis, but that credit is also due to the



International Nickel Company of Canada, Port Colborne—Main power house, showing turbo blowers running at 8,500 r.p.m., supplying air to the copper converters.

Foundation Co., of Montreal and New York, as the main contractor responsible for the construction, and to The International Nickel Co. for the broad and liberal attitude shown in having this plant built under the stress of war conditions.

A description of the turbo-blower was published by W. Wotherspoon in the *Engineering and Mining Journal* of May 17th, 1919, and is as follows:

The turbo-blower is a part of the mechanical equipment of the International Nickel Co.'s new plant at Port Colborne, Ontario, Canada.

The unit, which was furnished by the Rateau-Battu-Smoot Company, New York, has a capacity of 15,000 cu. ft. of free air per min., delivered at 15 lbs. gauge pressure. The speed of 8,500 r.p.m. at which it operates is believed to be the highest attempted or attained for a machine of this capacity and type. The outside dimensions of the turbo-blower are 9 ft. 6 in. long, 5 ft. 0 in. wide, and 3 ft. 11 in. high from floor line.

The driving end of the unit consists of a three-stage steam turbine in which the wheels are forged integral with the shaft. The turbine is designed to operate on steam at 150 lbs. pressure, superheat 100° F., and exhaust 2 in. of mercury absolute, under which conditions it can develop a maximum of 700 h.p. The turbine and blower shafts are connected by means of a flexible-pin type coupling. An important feature is the design of the blower impellers.

The equipment contains many special features, illustrating an advanced stage of turbo-blower design in both steam and air ends. In view of the high speed to be maintained, special attention was given to the question of exact dynamic balancing and efficient lubrication. Some repairs were found necessary at the beginning of operations, as a result of fracture of the impeller blades in the blower, due to faulty steel; but the adoption of nickel steel for these parts obviated further trouble.

The unit is equipped with a sensitive, constant-pressure regulator; and, as the compressed air delivered is for use in copper converters, a stabilizer has been added to permit the blower to run without tendency to surge on all loads from zero to maximum. A safety device to prevent over-speeding is also provided. This consists of a small fan on the end of the turbine shaft, which maintains a definite pressure on a tripping device controlling a butterfly valve in the steam line. This tripping device is capable of operating practically an unlimited number of times on these high speed machines without liability to damage to the movable parts.

Lead Smelter

Kingston Smelters.—Alex. McKinnon has operated the lead smelter at Kingston since February 14th, 1919, under the name of Kingston Smelters. This smelter was formerly the property of the North American Smelting Company, Limited, and now belongs to the bondholders of the defunct company.

Slag from the Galetta lead smelter is being treated in the blast furnace. Twenty-four men are employed.

FIRST REPORT OF JOINT PEAT COMMITTEE

By B. F. Haanel, Secretary

[NOTE.—The question of fuel is always an important one for the people of Ontario, both for climatic and industrial reasons, and during the early part of 1918 the situation was grave. There seemed no prospect of an early ending of the war. The entry of the United States into the struggle had diminished the supply of labour in that country, and the enormous movement of troops and war material to the Atlantic ports had congested the railways beyond any previous experience. Not only was the production of coal greatly lessened, and Canada's share cut down in common with all parts of the United States, but the difficulties of transportation were so great that it seemed as if national disaster were immediately ahead. Two things averted a catastrophe: one was the sudden termination of the war by the signing of the armistice on November 11, and the other was the unprecedented mildness of the winter of 1918-19. With the object of investigating and utilizing other sources of fuel, the Legislature in the session of 1918 appropriated the sum of $100,000, and the government naturally turned to consider the possibilities of two combustibles which the Province has in abundance, namely, wood and peat. In Algonquin Provincial Park the Crown possesses large supplies of hardwood, principally birch, maple and beech, and steps were taken to secure a quantity of this wood for use in the public institutions of the Province, and to eke out the supplies of fuel generally. Some 15,000 cords of this cut wood are still in the Park, of the best quality and in first-class condition for use.

The possibility of obtaining a good commercial fuel from our peat bogs has been the subject of more or less inquiry and discussion for many years, and the subject was investigated pretty thoroughly by the Bureau of Mines some seventeen years ago. The results of the investigation will be found in the Bureau's Twelfth Annual Report (1902), under the heading Peat Fuel: Its Manufacture and Use. Later, experiments were carried on by the Mines Department at Ottawa in the making of machine peat fuel at a bog near Alfred, in the county of Prescott. It was now decided by the Governments of Canada and Ontario to investigate the subject anew, in the belief that a satisfactory solution of the fuel problem would be a great public boon. Consequently, a joint committee was appointed by these governments, the cost of whose operations was to be borne by them in equal shares. Mr. B. F. Haanel, Secretary of the Committee, narrates the steps taken by the Committee up to the spring of 1919.—T. W. G.]

Introduction

On account of the shortage of fuel with which Canada was confronted during the latter part of the war, and which threatened to become very serious so far as Canada was concerned, renewed interest in the development and utilization of our peat resources was manifested by private parties and industrial organizations, who urged upon the Federal Government and the Provincial Government of Ontario the necessity of utilizing our peat deposits.

As a result of the representations made, the Legislature of Ontario, through Hon. George Howard Ferguson, Minister of Lands, Forests and Mines, appropriated $100,000 for the manufacture of peat and the cutting of wood, and a little later decided to construct and install a peat manufacturing unit similar to that which was last erected on the Alfred bog. At this time, also, the Federal Government was considering the advisability of assisting in the development of the peat industry by appropriating money for the construction of and experimentation with a new type of machine designed by E. V. Moore; and after a few days decided to undertake the construction of this machine. Mr. Moore was employed for a period of eleven months—the remainder of the calendar year—at a salary of five hundred dollars per month to superintend the making of detail drawings, construction of machine, and finally its operation on the bog during the period of experimentation. The Federal Minister of Mines, Hon Martin Burrell, was respon-

sible for the interest taken in this work by the Federal government, and also for the union of the two Governments in the entire undertaking which followed a short time thereafter.

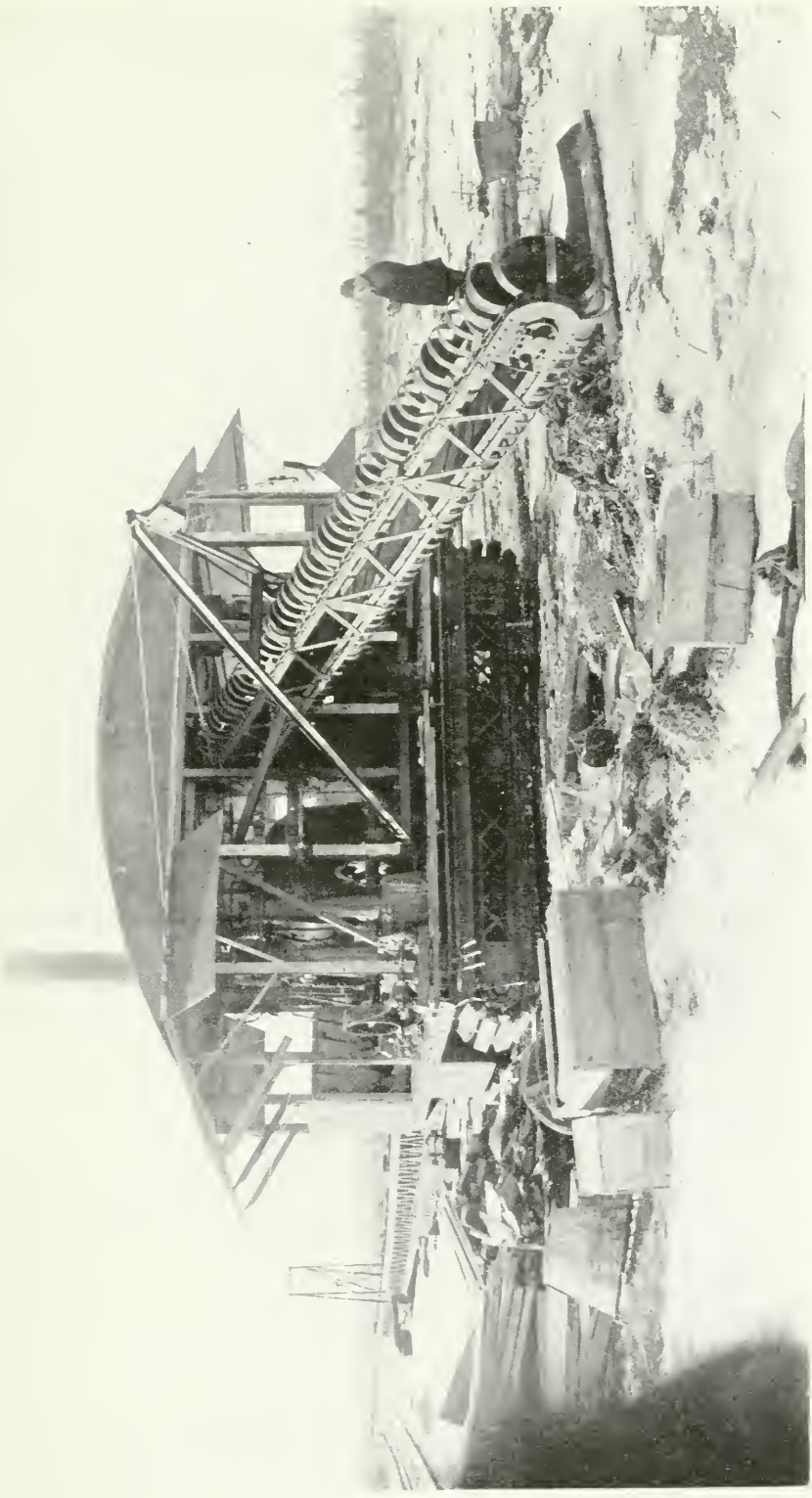
Appointment of Peat Committee

In order to carry out the plans formulated by the two governments for carrying to completion the investigation and experimentation involved in the design, construction and development of a type of peat machine best suited to meet the conditions prevailing in Canada, and to determine whether or not peat fuel can be manufactured at a cost which will permit of its competition with coal, it was decided to appoint a committee composed of two Provincial and two Federal representatives, who would have full charge of the expenditure of money and all operations: A. A. Cole and R. C. Harris were appointed representatives of the Government of Ontario, and R. A. Ross and B. F. Haanel were appointed for the Federal government.

It was agreed that all costs incurred in the investigation conducted by this Committee would be divided equally between the two governments, and Mr. Moore, who was previously engaged by the Federal Minister of Mines, as engineer, now became the engineer of the Peat Committee subject to their instructions.

Selecting a Bog

The inaugural meeting of the Peat Committee was held in the office of R. A. Ross, Montreal, on April 30th, 1918, shortly after the members were officially informed of their appointment. At this meeting the Committee appointed A. A. Cole chairman and B. F. Haanel secretary, and the question of choosing a suitable bog for carrying on manufacturing operations was discussed. It was the desire of the Hon. Mr. Ferguson to have the demonstration of the machine, to be constructed by the Provincial government, carried out on some bog conveniently situated with respect to Toronto, and the Holland river bog was considered to be the most suitable both because of the quality of peat and its situation with regard to Toronto and surrounding towns and villages. However, subsequent investigation carried out through the courtesy of the Hydro-Electric Commission of Ontario and by our own Committee, showed that this bog could not be employed to advantage for the work of the Committee on account of the high cost involved in its drainage. The choice of bogs was, therefore, after further careful consideration, confined to the Brunner, situated near Stratford, the Luther, Marsh Hill and Alfred bogs. The cost of preparing the different bogs for manufacturing operations, and the time such preparation would require, constituted the deciding factors in making the final selection. If it had not been for the exceedingly high cost of draining and preparing the Holland river bog for operations, this bog would have been the unanimous choice of the Committee. The second choice was the Brunner bog, but owing to the short time available for beginning the work of experimenting with the machines, which the Committee had every reason to believe would be ready for erection on the bog early in the fall of 1918, it was decided that the only bog which would prove suitable was the Alfred bog, on account of the fact that it had been drained and levelled for several years, and had a working face already prepared.



Moore-Anrep peat machine, showing 150-ft. arm carrying conveyor belt. The excavator is seen on the right, and the belt conveyor arm on the left.

The Committee accordingly recommended this bog to the Hon. Mr. Ferguson, who approved the recommendation. Arrangements were immediately made with a representative of the owners of the Alfred bog for terms on which the Committee could lease the bog for the time required to conclude the experimental work and put the machines in condition for manufacturing peat fuel on a commercial basis.

Designing and Making the Peat Machines

Considerable time was lost in completing the drawings of the two peat machines, since it was necessary for the engineer to the Committee to see and examine the various bogs from which the choice was to be made, in order to determine what changes would be required to adapt to the best advantage the two types of machine to the particular bog. Until, therefore, the choice of bog was actually made the design of the machines could not be completed.

In order to keep the expenditure on the two plants as low as possible, and to insure their completion in time to make a mechanical demonstration before winter set in, it was deemed advisable to design the plants with a view to utilizing such machinery and raw materials as could be obtained promptly, and although Mr. Moore was able to personally spend considerable time on the designs and drawings, much of his time was occupied in looking up various parts for the plants, attending meetings of the Peat Committee, and investigating the several peat bogs which were under consideration by the Committee. Notwithstanding the time thus lost, the designs of the two plants were sufficiently complete by May, 1, 1918, to permit of tenders being called for. The Committee received tenders from several reputable firms, among which was the William Hamilton Company, of Peterborough. The contract for the construction of the two machines was awarded to this firm on account of the fact that their shops were considered to be the best equipped for this special kind of work, and also because the Committee had every reason to believe that they would be better able than the other firms to complete the work on time, inasmuch as they had built the last peat machine erected on the Alfred bog. Notwithstanding the fact that the William Hamilton Company accepted the contract for the construction of the two machines to be completed and delivered early in September, with the full knowledge that penalties were attached to their contract to insure that their part of the contract would be carried out, this company only succeeded in delivering one plant practically complete late in November, while the other plant was still in the shops only partly completed.

Failure to Deliver Machinery Causes Delay

Failure to deliver these plants on time was due to disorganization in the William Hamilton Company's shops, labour troubles, shortage of skilled workmen on account of the influenza epidemic, but more particularly to lack of organization which would make it possible to get the required amount of work out of the staff or plant in general. Even under these circumstances the Committee as a whole considered itself most fortunate in getting the machines delivered even at such a late date, inasmuch as war work and disorganization resulting from the war made it almost impossible for many manufacturing concerns to live up to their contracts, either as regards time of delivery or estimated cost of the work undertaken.

The late delivery of the first plant precluded any possibility of giving it a mechanical try-out, since winter had already set in. The plant, however, was assembled, and its machinery thoroughly tested under steam. This plant now lies along the Canadian Pacific railway adjacent to that portion of the bog where it is expected its operation will begin. Such tests as were made to determine the reliability of the new mechanical features of the plant were most satisfactory.

At the end of 1918, the Anrep peat plant, which is still in the shops of the William Hamilton Company at Peterborough, was more than half completed. The fabrication of the steel and the assembling of the parts of the excavator, all of which are on hand at Peterborough, will require only a comparatively short time to complete. Other work to be performed before this plant is complete is the manufacture of various fittings for the cable traction system, the procuring or manufacture of a number of steel dump cars, and the construction of an Anrep spreader.

I desire, however, to draw attention to the fact that a number of the parts of the two plants are of the same design, and that all such parts were machined at the same time. This made it possible to complete a large part of the machine work on the Anrep plant by the end of 1918. As the work is now progressing, we have every reason to believe that this plant will be completed without fail before the snow is off the ground.

The construction of both machines is very strong, and it is not considered likely that any serious trouble will arise from the breakage of any important parts when the machines are put in operation. In designing the Anrep plant care was exercised to adhere as closely as possible to the original drawings which were made by the inventor, the late Aleph Anrep, Sr., and the changes which we found it imperative to make have been of a structural nature only. The machine has been greatly improved by placing it on caterpillars, a feature in the design which was stipulated in the original agreements made with Mr. Moore when he was appointed to act as engineer for the Peat Committee.

No arrangements have yet been made to lease that portion of the Alfred bog which runs along the Canadian Pacific railway track in a westerly direction, where it is expected Plant No. 2, or the Moore plant, will be operated, but it is not anticipated that any difficulties will be met in obtaining this portion of the bog at the same terms as the Peat Committee received for the bog owned by Mr. McFarlane and his associates.

Expenditure to December 31, 1918

The total moneys paid by the Peat Committee up to December 31st, appears in the following statement, which was prepared by the Accountant of the Mines Department, Ottawa:

WAGES:		
To E. V. Moore, engineering services, 1 Feb. to 30 Nov., 10 months at $500	$5,000 00	
" F. O. Orr, draughting, supervising, 4 May to 30 Nov., 6 28-31 months at $200	1,380 65	
" E. H. Morley, designing, draughting, 19 March to 19 June, 3 months at $200, $600; 24 June to 9 Aug., 156 hrs. at $1, $156	756 00	
" Dominion Engineering and Inspecting Co., checking drawings of 2 peat plants	150 00	
		$7,286 65

MACHINERY:			
To Wm. Hamilton Co., Ltd.:			
On Contract No. 1, Estimate,	$2,132 65 less 15 p.c.	$319 90	
" " 2, "	6,237 95 " "	935 69	
" " 3, "	6,306 42 " "	945 96	
" " 4, "	5,992 13 " "	898 82	
" " 5, "	1,644 10 " "	246 62	
	$22,313 25 " "	$3,346 69.....	18,966 26
To Miller Bros. & Sons, Ltd., 6 vertical boilers		$2,420 00	
" H. W. Petrie, Ltd., 1 boiler		1,620 00	
" A. R. Williams Machinery Co., 1 boiler (used)		1,555 00	
			5,595 00
TRAVELLING EXPENSES:			
To E. V. Moore		$1,499 57	
" B. F. Haanel		440 97	
" A. Anrep	$222 29		
wages, rod and chain men, guide	16 00		
		238 29	
" A. A. Cole		193 49	
" R. A. Ross		29 00	
			2,401 32
SUNDRIES:			
To E. V. Moore:			
Office rent, etc., from 1 March to 30 November, 9 months at $40.00	$360 00		
Blue prints	63 47		
Office supplies, stationery	30 59		
Draughting materials	28 80		
Freight charges	225 30		
Miscellaneous	40 40		
		$748 56	
To Estate A. Anrep:			
½ royalty on Macerator plant No. 1	$600 00		
½ Royalty on Macerator plant No. 2	300 00		
		900 00	
" Mount Royal Tunnel and Terminal Co., rental of crane, wages of crew, freight, etc.		263 20	
" F. Minden Cole, insurance premium on peat machinery ..		183 06	
" Bell Telephone Company, long distance calls		27 45	
" Dominion Express Company, express charges		1 30	
			2,123 57
Total net payments to 31st December, 1918			$36,372 80

REPORT OF ADVISORY GAS BOARD

Letter Transmitting Report

The Hon. G. H. Ferguson,

Minister of Lands, Forests and Mines,
Toronto, Ont.

Sir,—We, your Advisory Board, beg leave to lay before you our Report on Natural Gas Conditions in Ontario.

The main recommendations growing out of our discussions on the mass of detail which came before us, and which we present for your consideration, are:—

That all Natural Gas in the Province be conserved, and that measures be provided for the prevention of waste and misuse; allowance being made for a variation of treatment as between the Gas Fields of the east and west—the older and the newer fields—which, having reached different stages of decline, call for slightly different treatment.

That the present available supply of Natural Gas be allotted as far as possible for use in the homes.

That all rights existing under agreements be respected; provided that, where these rights interfere with the carrying out of conservation principles for the common good, they be modified and adjusted subject to proper protection.

That provision be made for appeal from the administration of the Natural Gas regulations, subject to such limitations as the Legislature may deem practicable.

That the diligent search for new gas areas and the tapping of the same be wisely encouraged; so that additional sources of this valuable fuel may be made available for the public, and that the utility of the existing costly systems of distribution now serving the public be preserved, which otherwise would soon be rendered useless or of small value owing to the decline and extinction of the present fields.

That consideration be given to the adjustment of rates and the establishing of an equitable scale of prices proportionate to the cost of discovering, producing and selling Natural Gas, and consistent with the general conditions prevailing in each district and the extent of available supply. That the intelligent allotment of any available supply not required for domestic use to those classes where its economical use will bring the most good, be fully considered.

That such supervision be established over field operations as will, by the aid of the operators and owners, encourage the general adoption of a policy of which extension of the life of the fields will be the main feature.

These matters are treated in detail in the following report, together with other important questions which we thought advisable to bring to your notice; all of which is respectfully submitted.

We have the honour to be, Sir,

Your most obedient servants,

Perry A. Little.
T. P. Pinchard.
H. R. Davis.
T. J. Mahony.
Ward Stanworth.
W. S. West.
C. E. Steele.
Alex. McKee,
J. S. Coate.
E. R. Gray.
E. S. Estlin, *Chairman.*

Chatham, Ont., February 12, 1919.

Introduction

It is well known that Ontario possesses no established source of fuel suitable for general distribution throughout the Province, and it is therefore apparent that immense quantities of coal and other fuels must be procured from other parts of the Dominion or the United States, to supply the domestic and industrial requirements. This commodity, therefore, upon which life and prosperity depend, has to run the gauntlet of the uncertainties of transportation and labour before it can be laid down at the furnace or home of the consumer.

While this is true of the Province as a whole, there is a section stretching from Niagara Falls and Hamilton on the east to Windsor on the west, and along the Lake Erie shore on the south to Sarnia, London, and Galt on the north, that is supplied with fuel in the form of natural gas produced within the area mentioned, the eastern districts having been supplied as long ago as 1889, and the extreme western portion in the same year.

The records show that in 1894 it was regarded as prudent that certain restrictions should be placed upon the use of gas, and a Committee of the Legislature was appointed to inquire into the conditions, which made the following recommendation in its report:

> That as regards the economic use of Natural Gas, witnesses are agreed that it is one of the most valuable of all fuels, and in view of the limited supply it appears desirable that its use as far as possible should be confined to the purposes of domestic fuel and in the production of the finer classes of manufacture.[1]

The extravagant use of this valuable fuel, however, seems to have gone on,[2] particularly throughout the area supplied by the Kent gas field, until a serious shortage in the supply occurred in the winter of 1917-18 owing to extreme weather conditions, when, at the instance of the Government, the Legislature took measures to meet the emergency, and restrictions[3] were put in force whereby the remaining supply of gas should be conserved for domestic purposes.

During the summer of 1918, while gas was being "rationed" to industries in diminishing quantities, so that the supply of war necessities should be least interfered with, and suitable changes in apparatus might be effected, it became apparent that definite and permanent regulations should be devised governing all phases of natural gas transactions. Hence the Natural Gas Advisory Board was appointed on December 14th, 1918, by the Minister of Lands, Forests and Mines, consisting of ten members, for the purpose of recommending methods for solving many of the gas problems.

Meetings have been held each week at different places. The public have had access to the councils of the Board, and brought to its notice certain matters worthy of adjustment. The same may be said of those representing private interests, who appeared and laid their requests before the Board.

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[1] Journal of Legislative Assembly, Vol. XXVII, 1894, Appendix No. 1, p. 6.

[2] Bur. Min. Rep., Vol. XXVII, 1918, Part 1, p. 53 *et seq.*

[3] The Natural Gas Act, 1918 (8 Geo. V, chapter 12).

It has been the Board's endeavour to ascertain and display conditions as they exist, and to suggest methods which would make for a better administration of gas transactions. Consequently, in the following pages are submitted many explanations setting forth in detail the subjects which require regulation and control.

Some of the subjects treated are matters of administration, and are brought out herein for the purpose of reference and to show the need of adjustment. It is the Board's opinion that the situation admits of much improvement, and that gas production and consumption can be carried out with better satisfaction to all concerned if conducted under suitable regulations and restrictions. The changing conditions affecting the future supply of gas call for discretionary powers on the part of the executive, so that regulations may be made to conform thereto.

The members of the Board have been constantly reminded, in the course of their deliberations, that there are two parties to the gas question: First, the public, who pays the bills, and for whose comfort it becomes necessary to allot the remaining supply of gas for as long a period as possible. Second, the producers, who shouldered the hazard of the initial discovery and on whom, by further search, lies the burden of maintaining the supply, and to whom, with the distributor, the public must look for effective service in the future. It is a matter of regret that the general features and difficulties incident to this particular form of service are not well understood by the public.

It may be interesting to mention that there are approximately eighty thousand domestic users of gas in the Province, and as five is generally conceded to be the average number of people in a home, it follows that there are about four hundred thousand people affected by the prolonged supply of gas as a fuel; also that about one hundred dollars is the average investment for gas equipment in each home, amounting to about $8,000,000—the gas supply for which calls for an outlay of three times that amount, or about $24,000,000.

Conservation of Supply

Under this heading we include measures of different kinds that can be taken to prevent waste and misuse, all the way from the well to the consumer.

As this is the fundamental principle dominating our discussions, we will quote extracts from the reports made by members of the Board on subjects germane to its investigations, and make use also of other sources of information:

This means economy of management: proper distribution of drilling; prevention of waste through leakage at the well, in transportation and distribution; waste through improper appliances in burning gas. It becomes incumbent upon the companies producing, transporting and selling gas, for their own protection, to remedy faults in this respect, yet supervision should exist to protect against careless operations.

Conservation in a broader sense has come to mean the elimination, as far as possible, of the factory user, and the reservation of the remaining supply for the home. When the fields were flush and the supply plentiful, year after year the householder used natural gas without really appreciating its benefits, but when the fields weakened and the time of a lean supply came, then the home users awoke to the fact that it made for a convenience and comfort that was lacking in every other fuel. Its commonness had made it cheap and unappreciated. To-day governments and communities have recognized its worth and are everywhere seeking to prolong its use

True conservation is not hoarding, but the wise use of natural resources, and it implies not merely the preserving in unimpaired efficiency, but also a wise and equitable exhaustion with a maximum efficiency and a minimum waste. The heart of the natural gas conservation problem is the conflict between the present and the future. The individual land-owner is interested primarily only in immediate present personal returns. That is, he is thoughtless and indifferent with respect to the future. The public—at least the domestic natural gas consumers, and the people dependent on natural gas for their cooking, heating and lighting purposes—are interested in conserving the supply and bringing about a slow, wise, and economical exhaustion of the field so as to insure continuity of service for the future.[1]

Conservation, therefore, demands intensive rather than extensive use, takes cognizance of equitable distribution, aims to bring about social justice, and means the greatest good to the greatest number—and that for the longest time. (See Prof. C. R. Van Hise's "The Conservation of Natural Resources in the United States," and Prof. Richard T. Ely's "Conservation and Economic Theory," Trans. Amer. Inst. Min. Eng., vol. 54, p. 458.)

For eleven years the natural gas resources in the Kent field have been drawn upon without proper and adequate restrictions, to such an extent that if consumption were continued at the same rate the field would inevitably be completely exhausted in six years.

The Essex field was exhausted by reason of unrestrictive methods in fifteen years and is extinct.

The Eastern field (including the gas fields of Welland-Haldimand counties, etc.), has yielded gas for thirty years, but early in the history of this field it became apparent that the supply would fail if the output was not restricted. Small quantities of gas were therefore supplied to industries, and the domestic consumers furnished under economical measures, with the result that the life of the field has been materially extended.

We therefore recommend that all natural gas in the Province be conserved for the homes as far as possible, because:

It is the most valuable fuel in the Province.

It is rapidly diminishing in supply.

There is only a limited amount remaining in the known fields.

No evidence can be found that natural gas is being formed to replace what has been used up or wasted.

Other fields the world over demonstrate beyond doubt the failing supply.

Efforts by further drilling in depleted fields have proven unsuccessful.

Experiences of half a century show conclusively that natural gas is the most convenient and useful of fuels.

The governments of the United States have found it necessary to take drastic steps and make careful laws for conserving natural gas in all their gas and oil fields, thus assuring a supply for domestic consumers for the longest possible period.

Measures are necessary to prevent too rapid a decline in the fields, because a rapid depletion of a gas field is a factor which is contrary to conservation.

Gas wars result in the drowning out of wells.

The aim of all legislation should be to prolong the life of the gas fields.

The history of all gas fields is one of constantly changing conditions, and legislation should take into account that what will apply satisfactorily to the early life of a gas field will be injurious at a later stage.

[1] Bulletin 102, Smithsonian Institution, p. 18.

The endurance of gas fields is not generally understood to be limited.

The early value of gas was not recognized, because gas was incidental to the early search for oil and was more or less of an encumbrance to the oil enterprise.

Gas was used as an inducement in the establishing of factories, and little consideration was given to the rapid dissipation of supply.

Salt water is the greatest enemy to natural gas; it underlies the gas and rises as pressures reduce.

Many fields are drowned out by careless methods in spite of remaining high pressure.

The following tables show some interesting indications of the decline in supply:

Comparative Output of the Canadian Gas Company.

1917.—174,111.93 M. cu. ft.; last six months, 83,609.36 M. cu. ft.
1918.—125,664.90 M. cu. ft.; last six months, 46,484.85 M. cu. ft.

The Dominion Natural Gas Company's gas production fell off 35 per cent. in three years, and the total over all their wells 20 per cent (1917-1918).

Open Flow Production Dominion Natural Gas Co. (Eastern Field.)

1915.—No. of wells, 372; production, 21,825 M.; average open flow, 58 M.
1916.—No. of wells, 579; production, 27,294 M.; average open flow, 47 M.
1917.—No. of wells, 751; production, 27,793 M.; average open flow, 36 M.
1918.—No. of wells, 747; production, 25,547 M.; average open flow, 34 M.

Kent Field; Production and Decline of Pressures.

——	Pressures	Million Cubic Feet
	Lbs. per sq. in.	
Estimated Waste	.....	2,000
1907	.....	297
1908	.....	848
1909	.....	1,996
1910	.....	4,589
1911	.....	5,649
1912	.....	7,752.5
1913	512	7,975.8
1914	491	10,121.6
1915	475	10,819.1
1916	434	13,752.5
1917	368	15,449
1918	330	9,389.4

Union Natural Gas Co.

Original open flow of 111 wells	177,994 M.
Same wells in 1915	90,097 M.
Original open flow of 124 wells	168,502 M.
Same wells in 1916	55,090 M.
Original open flow of 119 wells	50,799 M.
Thirteen new ones added—	
Same wells in 1917	58,165 M.
Original open flow of 132 wells	39,865 M.

Note.—25 per cent. of open flow is effective commercial delivery.

Open Flow of Glenwood and Beaver Gas Companies.

1916	56,554 M.
1917	46,385 M.
1918	30,096 M.

Prevention of Waste

Gas transactions all the way from well to burner are a history of waste, most of which is preventable.

This waste is a direct money loss to the consumer as well as to the producer, which can never be restored.

Conditions in the Welland-Haldimand Fields prove the error, that because the early wells were large producers the supply was limitless. This idea has led to enormous waste.

In the State of West Virginia, eight years ago, not less than five hundred million (500,000,000) cubic feet of this precious gas was daily escaping into the air from two counties alone.[1]

Regulations should provide stringent measures for the prevention of waste:

At the wells.
In transmitting gas to distribution.
In distributing.
In the use of gas in improper appliances for burning.
By the use of properly constructed appliances, and their proper adjustment.
By economical methods in handling in the homes.
By limiting the use for specific purposes.
By restricting as far as possible all natural gas to domestic uses.
By the closing of new wells promptly.
By the use of proper casing.
By the proper placing of packer.
By proper methods of use under boilers used in drilling.
By prohibiting the use of torches.
By restricting the drilling of offset wells.
By the proper plugging of abandoned wells.
By prohibiting waste of gas to obtain oil.
By careful and prompt repairs to transmission lines.
By the abolition of flat rates.

Syndicate Gas Lines Tapping High Pressure Lines

For the convenience of supplying gas to rural inhabitants in the vicinity of high pressure transmission lines, it has become a common practice for residents to club together and run their own gas line along the highway, which taps the high pressure line where most convenient. The lines do not receive the best of care, and being subject to high pressures and generally fully exposed, are a very prolific source of leakage.

[1] Bulletin No. 102, Smithsonian Institution.

There are approximately five hundred miles of such lines in the Kent gas area. If we assume three hundred joints to the mile and figure a safe average size of pipe to be one-inch, then we have on these lines alone approximately one hundred and fifty thousand sources of leakage.

But this is not all. Each house service is controlled by a regulator, and, the line being small, it is a common practice to load the arm with additional weight so as to increase the pressure at the burner, the result being an enormous waste at the relief valve.

Attention should be given to some means of control by meter at the point of junction, so that all gas can be measured into the line and paid for, or by putting the lines under control of the gas company supplying them with gas.

It is estimated that in many cases consumers on these lines waste three times as much as they burn.

Semi-Annual Reports Showing Line Leakages

The waste encountered in the transmission of gas over long distances, under high pressures, did not come to be appreciated until quite recently, because there was no reliable device for correctly measuring the flow of large volumes of gas under pressure. Meters are now being installed which are constructed under scientific principles, and the measuring in of gas volume can be easily checked with the total distributed or delivered. The true condition could be easily recorded and remedied if statements were rendered by the gas companies to the Government every six months, showing the amount of gas delivered into the lines or to distributing companies and the amount taken over and sold.

It is urged, therefore, that much good will result if reliable reports are handed in at prescribed dates consistent with the operations of the companies, showing the volume of gas handled and other particulars, so that sources of waste may be detected and remedied.

Measuring all Gas Through a Standard Meter

All gas should be metered, no matter what the purpose for which it is consumed.

The meter used in the houses is one of the most reliable instruments made, and has stood the test of time.

No meter can possibly record unless gas is being passed through it.[1]

No general waste can be properly dealt with without metered service.

Flat rates, where there is no check on the amount used, have proven to be a great encouragement to waste.

There is an existing means of protection afforded to the public under a Dominion Act which provides for the Government testing and sealing of any meter suspected of recording incorrectly.

[1] Bulletin No. 102, Smithsonian Institution.

Control of Gas from Oil Wells

It is quite common for large flows of natural gas to be encountered while drilling is being carried on for oil. This gas was formerly considered as a valueless product which increased the difficulties of the oil driller, and accordingly it was allowed to escape as quickly as possible.

It can be reasonably expected that future exploration work will reveal pools where gas and oil are associated. This is true to-day in the Dover field, but in Dover the gas is being piped into the lines and sent to market.

There are, however, in Lambton county, a large number of oil wells from which gas in large quantities has been allowed to escape for many years. Part of it is piped to the dwelling, but pressure is regulated by allowing the excess to escape and by maintaining flares around the buildings, which have been kept burning for years. This is a matter requiring control and regulation, but it may be found that former legislation has some bearing upon the question.

Protecting Gas Wells from Injurious Interference

One feature which has caused great loss in the operation of gas fields, not only to the producer but to the community, and which also worked a certain disadvantage to the lessor, is the unfair and unwise practising of competitive drilling.

Instead of larger areas being opened up and acreage holdings being more uniformly covered, wells have been bunched together for the purposes of participation, and the company which could carry the lowest pressure won from its wells the larger production.

Valuable pools have been ruined by the crowding of wells for competitive purposes.

Allotting Gas Supply to the Homes

There are approximately eighty thousand homes using natural gas in Ontario.

About five hundred industries used it prior to the restrictions of 1918.

In the winter of 1917-18 the supply of natural gas from the Kent field failed to keep pace with the demand, and much suffering in the homes was narrowly averted by the prompt action of the government in putting into force measures which cut off the industrial consumers temporarily, and allowed the available supply to be quickly delivered to the homes. Thus the crisis passed.[1]

The eastern gas fields, having been drawn upon for about thirty years, only produce about twenty per cent. of the total gas consumed, and that amount has automatically been restricted to the service of domestic consumers, who use it economically and are fully aware of the uncertainty of the supply.

The Kent field produces about eighty per cent. of the natural gas used, and domestic consumers do not yet realize that a stage has been reached where the utmost economy must be practised in order to provide them with enough fuel to meet requirements.

Within the area supplied by the Kent fields there are about 35,000 homes equipped with heating appliances more or less suitable for using gas, and not convenient for the use of coal.

[1] The Natural Gas Industry in 1917, by G. R. Mickle.

The restrictive use of the remaining gas, if confined to domestic service, will mean the extended life of the field for many years, as has been clearly shown in the history of the eastern field, and by analysis in the records of the Department of Mines.[1]

Classification of Gas Consumers

The following classification is suggested as giving an order of preference when further decline in supply demands discrimination in the ranks of consumers:

1. Household cooking.
   Household lighting.
2. Cooking elsewhere than above included.
   Lighting elsewhere than above included.
3. Household heating.
4. Special industrial purposes where artificial gas would be used if obtainable, upon quantity limitation.
5. (1) Heating other than above included, but according to the following order of preference:

(*a*) Where individual rooms are each separately heated by individual appliances.

(1) Hotels;	(4) Offices;	(7) Stores;
(2) Hospitals;	(5) Boarding Houses;	(8) Private Garages;
(3) Schools;	(6) Charitable Institutions;	(9) Apartment Houses.

(*b*) Churches;

(*c*) Theatres; Waiting Rooms; Public Buildings; Assembly Halls; Clubs, and other than above included.

(*d*) Where individual rooms are not each heated by individual stoves.

(1) Hotels;	(4) Offices;	(7) Stores;
(2) Hospitals;	(5) Boarding Houses;	(8) Private Garages;
(3) Schools;	(6) Charitable Institutions;	(9) Apartment Houses.

It is further urged in the attached memorandum that special rulings may be necessary to meet emergencies and to modify the classifications as given above, and that each case be considered on its merits.

Rights under Agreements

The transactions of the natural gas industry are fraught with the obtaining of concessions and privileges which are essential to the marketing of the product; thus, in many cases, the barter has generally included, as a consideration, the supplying of cheap or even free service, or perhaps the according of rights of priority. Almost any form of restriction runs counter to these agreements, which

[1] The Natural Gas Situation in the Counties of Kent, Essex and Lambton, by G. R. Mickle.

were entered into at a time when the conditions of supply, and prospects of maintaining it by drilling efforts, seemed to warrant any obligations for the purpose of securing ample market.

These agreements consist mainly of specially guaranteed supply under contracts, together with rights-of-way and privileges under franchises and lease contracts. There can be no doubt that where gas was allowed at a low price or without charges, it was intended to offset a privilege given, and the difference became part if not the whole of the consideration. It is also apparent that in some cases restrictions bring a direct benefit to the consumer, without which he would not enjoy the benefits of his bargain for very long.

It is therefore urged that some plan be propounded whereby contracts which may be affected by the conservation of natural gas for the common good, should be modified or adjusted so that the rights of the parties should not be unduly interfered with, and that in the conservation of natural gas, the rights of any person, company or municipality existing under contract or franchise, should not be prejudicially affected; nevertheless, should the policy of conservation prejudicially affect any person, company or municipality, the government should devise a means of protecting such rights.

We, your committee, wish it understood that if any variations of the said contracts are made, it is solely for the purpose of conserving the natural gas supply for domestic use.

Providing Appeal

In administering regulations covering such an involved array of interests, it is reasonable to expect that contentions will arise.

It is considered necessary that provision be made for an appeal from the person or body administering the regulations, but that this appeal be limited as the government may deem wise.

The gas fields are rapidly declining, and where appeals are made and relief expected, the process should be expeditious, because of the changing nature of the gas conditions.

Encouraging Search and Development Work

So much depends upon the enterprise of searchers after new sources of supply that no obstacle should remain to discourage operations in this direction.

Large areas, prolific with possibilities, surround the chief gas fields of the United States, and the decline within these fields has not made itself so manifest because search could be carried on with a reasonable expectation of success by extension of the field in these surrounding areas.

This is not so in Ontario, where the gas area is circumscribed and confined within meagre limits in most cases.[1] That there are still some undeveloped areas where pools may be opened up, seems evident, but if these pools prove to be insignificant and scattered, and distant from market, the outlay will be great and the returns small. Thus the hazards of the business, with special reference to the developing of new fields, should be kept in view when regulations are contemplated.

[1] Bur. Min. Rep., Vol. XXIV, Part II.

A large area of gas-bearing rock has been tested out in Ontario, but there is a possibility of opening new sources by persistent exploration.

Present producing companies, in order to protect their established enterprise, will continue to carry on a certain amount of exploration if a fair return from their outlay is assured.

Expropriation for Rights of Way

In order to facilitate the extension of gas service where rights-of-way are required for the laying of new pipe-lines, and satisfactory negotiations are found impossible, it seems desirable that expropriation principles should be the remedy, as provided for in the Ontario Municipal Act.

The Protection of New Discoveries

In the case of an entirely new gas field being opened up, it is possible that this may call for the relaxing of restrictions within certain necessary limits.

There should be a measure of protection afforded to the pioneers of a new field so as to protect, in so far as is considered possible, against predatory competition in production and distribution.

Administration of New Gas Fields

Regulations and restrictions which are suitable to a declining gas field will not always be found workable in a new field.

That history has taught us that certain measures may result in the better preservation of a gas field, is very clear, and with years of experience to draw from, and the knowledge of abuses having existed in the past, which called for remedies, any new gas field should be surrounded with such safeguards as may be most suitable.

Adjustment of Rates

Considering the depletion of the present gas fields and the conservation of natural gas, the rights of the producing, transmitting, and distributing companies should be duly considered, and provision should be made for compensation to the said companies to meet the increased cost of operating a declining gas field, by a return commensurate with the nature of the enterprise;

Also by an adjustment of the price of natural gas to consumers, having due regard to the conditions in each municipality where sold;

By fixing a higher rate for summer, say from 1st May to 31st October, because of the limited consumption during that period, and a different rate for the remainder of the year;

Further, by setting a price for the sale of mixed, artificial and natural gas, having regard to the proportion of each used and local conditions where sold.

As regards the last, in some Ontario cities artificial gas plants are operated as auxiliary to the natural gas supply, and the products are mixed in the mains. The time may come when artificial plants may be established to furnish a supply through the present high-pressure systems calculated to finally take the place of the gas fields.

This would call for the establishing of a rate based upon the proportion of each gas metered into the mains, having regard to the increased cost per unit M.C.F. in the production of artificial gas below the normal capacity of the artificial gas plant.

Supplying New Domestic Consumers

Gas should be supplied to all new consumers whose property abuts on the present mains and lines.

New consumers should not be encouraged when located beyond the reach of existing mains, except in special cases approved by the administrative Board.

No new districts in settlements or municipalities should be supplied unless from new sources.

Additional Matters for Regulation

In preparing Natural Gas Regulations, the following should also be duly considered:

Establishing supervision of operations.

The appointment of officials, etc.

Exempting Departmental officials from giving evidence in court.

The cutting off of supply where necessary.

The control of works, machinery, and plants.

Licensing of Drillers and Prospectors

Ready access to reliable data would have saved immense sums which have been spent in fruitless drilling.

It is a matter of common observation in natural gas mining that offset well locations are frequently dry holes. This is because most natural gas pools are not strictly continuous, but are made up of many small local pools, frequently surrounded in whole or in part by a gas rock of low porosity. For this reason, if a producing well has been drilled into one of these small local gas pools there is a large chance that the offset well location may go beyond the limits of the pool, and therefore be a dry hole.[1]

If government records are obtained they must be reliable, and if drillers and prospectors are operating under the protection of a licensing system, their license should provide for the making of returns to the Government. From these returns geological surveys may be made which would be of vast importance in guiding the prospector in the intelligent locating of new wells. Co-operation in this manner would enure to the benefit alike of the driller and the prospector.

The prospector's license should provide for a true record of new well locations, and proper maps could be kept up-to-date.

Protection Against "Boosters"

There are several kinds of "boosters" known to the gas trade.

The "booster" alluded to here is sometimes used on the premises of a consumer, as a means of maintaining pressure when the supply is not great enough

[1] Bulletin No. 102, Smithsonian Institution.

to go round. The result is that one man is able to secure gas at the expense of his neighbour. This should not be allowed; it is already forbidden under some by-laws, but the prohibition should be made general.

The use of any appliance which tends to interfere with the local gas service should be prohibited.

Drilling for Gas on Public Highways

At various times during the life of the natural gas industry, efforts have been made by gas companies to secure from a number of township councils, permission to operate for natural gas upon the public highways.

In practically every case the permission sought has been refused because it was not considered in the interests of the general public.

Producing natural gas from wells on the public highways can only result in waste from excessive drilling, in the early exhaustion of the fields, and in loss to the abutting property owners by withdrawing gas from their lands without adequate compensation.

Efforts, however, are still being made for the securing of this privilege, and the Board would therefore strongly urge that the necessary steps be taken to co-operate with the various township councils for the purpose of preventing the use of any road or public place within any township for the purpose of drilling for natural gas.

The Ontario Gas Fields

General Conditions

Everywhere the natural gas business is in a state of transition: changes in field and market are being forced by conditions which for years, like the slow and sure growth of a cancer, have eaten into the vitals of the supply.

When natural gas began to be universally used for domestic and commercial purposes, it was thought to be free and everlasting. Usually discovered in the search of oil, it was considered of incidental value. Even when companies were organized and hard money invested to develop and market natural gas, its real value was not appreciated either by producer or user. Contracts for its sale were governed by exigency rather than equity. Cities were boomed and real estate inflated on the strength of cheap gas. Factories were called from afar to burn gas at prices ranging from three to ten cents per thousand cubic feet.

Whenever a gas field was found productive enough to attract attention, the citizenship of the connecting markets actually planned through civic bodies how best to quickly dissipate the supply at a ridiculous price. Nor did the producing companies exercise a greater degree of intelligence at their end of the business.

The inevitable result came. The supply weakened; the factories, lured in by cheap gas, moved on; the real estate inflation collapsed; many cities awoke to learn too late that they had dissipated—actually given away—one of Nature's fine gifts to man.

The shortages which have occurred almost universally throughout the United States and Canada have alarmed the people. They are now awake, and they see ahead the loss of a vanishing fuel.

The arms of the pipe-lines have been flung, year by year, farther afield to get more gas to supply the shortages: enormous expenditures of money have been made in drilling campaigns and line extensions throughout almost all gas-using sections of the United States. Yet last winter there was actual suffering because of gas shortage. In Buffalo, after thirty-five years of continuous service, the Iroquois company has had to issue an order cutting off heating furnaces during three winter months, the supply being adequate only for cooking purposes during this period. This instance reflects the condition of the natural gas shortage throughout the United States. It forecasts exactly what soon would have occurred in Ontario if the Government had not taken steps to conserve the remaining supply of natural gas for household uses.

Throughout this section a few of the older gas fields, after years of service, are approaching exhaustion. Others still yield sufficient gas to give reasonable household service. The Tilbury field, by far the most important in size and production, has yet remaining, according to pressure measurement, one-half of its original supply, or about eighty billion cubic feet.

Three important problems must be effectively solved in treating this remaining supply so as to secure the greatest and longest-lived benefit to the gas-using public of Ontario.

First: The credit of eighty billion cubic feet of gas to this field holds true only under the most careful management of the wells. In the same stratum and immediately underlying the gas, is a body of salt water. A high rock pressure held this water in check, but as the pressure diminishes it ascends in the wells and must be pumped out, otherwise the flow of gas will cease. Hard pulls create sharp declines in pressure, and then the water becomes a menace. This field, to yield the estimated volume remaining, must be handled with extreme care. The pull must be gradual and uniform, otherwise the water will drown the field just as it did at Kingsville years ago.

Second: Perpetual vigilance must be exercised against waste in the production, distribution, and consumption of gas—a waste, as already pointed out, possible and even likely, in a multitude of ways. Further, gas must be restricted as far as possible to domestic use.

The third problem is one of cost, for the gas remaining in the Ontario fields is of no benefit to the consumer without efficient service, and this cannot be given unless a price, fair in the face of existing conditions, is fixed for the commodity. Service stands equally important with supply: they should go hand in hand, for either is worthless without the other.

The Possibility of New Fields

Also there is still another factor to be considered, apart from the conservation of the remaining supply of the present fields: and, under proper incentive, it may rank of even greater importance. It is the possibility of discovering new fields.

A large part of Ontario has been tested and condemned as gas-bearing territory, yet there are possibilities of opening new sources of supply by persistent exploration.

Wild-catting for new fields is a hazardous and costly operation. It would be

an interesting story bearing directly upon future prospects, if the record of failures and their cost could be told. Unfortunately these facts are unavailable. An estimate based on data gathered from various sources shows that probably $1,000,000 has been expended during the past two years in western Ontario in search of new pools. With the exception of a few wells in Dover township of unknown stability, this money has been lost.

Exploration for natural gas should be encouraged on the part of everyone. However, the present producing companies, because of their established business and the immense value of their fields, associated pipe-lines and markets, will expend by far the most money, time and energy in work of this character.

For them, new gas fields mean a longer life to their business; to the homes within pipe-line reach of such discoveries, they mean a continuing supply of an ideal fuel; to the whole Province of Ontario a tangible, valuable asset.

Yet no person or company, or the present producing companies, will hazard their money in wild-cat ventures without a reasonable assurance of an adequate return should gas be discovered. So thus a simple, though age-old, law of trade will regulate the quest of new gas supplies.

Every consumer each day burns up part of the actual property of the producing, transporting and distributing companies. The output of the fields each day is gone forever; no more is being created. It follows that a persistent and costly search for new gas is the method by which the supply may be kept continuous.

Samuel S. Wyer, of Columbus, Ohio, is recognized as one of the foremost authorities on natural gas in the United States. He states, in Bulletin 102, Part 7, issued by the United States Government through the Smithsonian Institution:—

> In no case would it be prudent business or good judgment to attempt to conserve a waste of gas, or develop a new supply, that would not take care of the fixed charges on the investment and the operating cost during the life of the gas that is saved or developed, on the basis of the volume of gas that can be obtained from such an enterprise and measured through the ultimate consumer's meter at the present market prices. An adequate price is therefore the crux of the natural gas conservation question. Unless it is made worth saving by the public it will not be good business judgment to attempt to save it.
>
> Since the hazards are greater than in any other mining enterprise, the profits ought to be correspondingly greater. This element of profit is the only incentive which impels men to engage in so speculative an enterprise. If, in the aggregate, this amount of profit does not measure up to the hazards in the business, the men will cease their work of prospecting and put their capital in safer enterprises. Wherever a close connection exists between effort and profit, a stronger resulting incentive is furnished for a further and continuous expenditure of effort. Therefore, a high rate of profit, which will induce men to prospect continuously for natural gas, brings about the condition that more people can use gas and represents a distinct saving to the community.
>
> Natural gas has never been equalled by any man-made product. The worth of natural gas for most high-grade utility services is ahead of any competing commodity or utility service. The only thing that will effectively conserve the supply for future use, and thereby insure continuity of future service, is an adequate price commensurate with the worth or value of the service. Therefore, the public is served best when natural gas mining is made profitable.

The Welland County Gas Field

Welland county is the oldest producing gas field in Ontario, the first well being drilled in the township of Bertie in 1889. This field has produced during the past thirty years a very large quantity of natural gas, but an estimate of the

amount produced is not available for this Committee. The depth of the wells in the Welland field range from 500 feet to 900 feet, according to their location. Twelve deep wells have been drilled to the granite, a depth of nearly 4,000 feet, but only three of these wells have produced gas in sufficient quantities to justify their retention.

Practically all the gas in this field has been secured in the Clinton and Medina gas sands. The original rock pressure of the former was 360 lbs., and of the latter 510 lbs., to the square inch. It is doubtful if there is a square mile in the whole southern part of Welland county in which a gas well has not been drilled. The northern part of the county has also been thoroughly tested, but the wells in that part of the county produce very little gas, and the majority of holes drilled were dry.

The early history of the natural gas industry of this field is similar to that of practically all fields. The mistaken idea prevailed that because the early wells were large producers, the supply was practically limitless. This old but vital error was followed by a large measure of waste. Wells were sometimes allowed to remain open for a considerable time after being drilled in. Leaks in gas lines were not promptly repaired, and these, together with excessive drilling, resulting from undue competition, have had a serious effect on the available gas supply. The original rock pressures have dropped from 510 to 100 lbs., and from 360 to 45 lbs., but these pressures vary somewhat in different locations.

The most serious loss, however, in the field has resulted from the ridiculously low price at which gas was sold in the early days.

In 1892 the Mutual Natural Gas Company supplied the Erie Glass Company with gas at $1,000 per year, and the only stipulation contained in the agreement was that the use should not exceed 200,000 cu. ft. per day, which would be about 1 2-3 c. per thousand cu. ft. Unfortunately for the glass company, but very fortunately for the gas company, this glass plant burned down within a year of its erection. Records which have been made available to the committee show that gas was first sold for domestic use for a cook stove and a heater at $27.00 per year, without any limit upon the amount consumed. In a very large majority of cases this amount was the limit paid for gas used in a private residence, and as the facilities for burning the gas were very crude, the results were extremely wasteful.

In 1899 meters were first placed in the town of Port Colborne, and although the price charged was only 17½ cents per thousand cu. ft. there was a strong popular objection to the placing of meters.

In 1901 the price was raised to 20c., in 1907 to 25c., in 1909 another advance brought the price to 30 cents, and in 1915 the price was raised to 40 cents, and under a town franchise the price will be advanced this year to 50 cents net per thousand cu. ft.

During the history of the gas in Welland county many serious shortages have occurred, resulting in deplorable loss and inconvenience to the public. These conditions would not have been experienced had both the companies and the public exercised reasonable judgment in the use of gas, and had a price been paid commensurate with its real value. The cities of Niagara Falls and Welland have been

able to secure only a fraction of the gas they require for domestic use, notwithstanding the fact that the residents of these places would be prepared to pay almost any price if they could secure an adequate supply.

Haldimand and Norfolk Counties

The first well in the Haldimand district was drilled about 1889 in the village of Caledonia. The first wells drilled by the Dominion Natural Gas Company in this county were in 1905, and a line was laid to Hamilton the same year.

Gas fields are fairly well distributed throughout Haldimand county. The wells are shallow, averaging about 900 feet, and the cost of drilling is comparatively small. These conditions favoured the creation of many small operating companies, who engaged in a destructive competition to exhaust the gas as rapidly as possible.

In 1906 the Manufacturers Natural Gas Company, Limited, laid a line from the Selkirk field in Haldimand county to Hamilton. They produced no gas, but purchased their supply from local operators and sold it for industrial purposes. In the seven years from January, 1907, to December, 1913, this company marketed 5,494,402,000 feet of gas, almost all of it going to Hamilton manufacturers. The maximum was reached in 1910, when 967,548,000 feet was sold.

The Dominion Natural Gas Company has absorbed many of the small producers in this field, and purchases gas from most of the others. Competitive drilling has been largely eliminated, and every effort is made to keep the wells and fields in a condition of maximum efficiency. To maintain its supply it has, in the last three years, drilled 196 wells, 51 of which were dry holes.

A condensed statement of the condition of the field of the Dominion Natural Gas Company from 1915 to 1918 follows. Many wells were acquired by purchase during this time. If the original volumes and pressures of these wells were available, the statement would be still more impressive.

DOMINION NATURAL GAS COMPANY, LIMITED.

Summary of Open Flow of Gas Fields

Division	1915		1916		1917		1918	
	No. of Wells	Production	No. of Wells	Production	No. of Wells	Production	No. of Wells	Production
		M Cu. ft.		M Cu. ft.		M Cu. ft.		M Cu. ft.
Simcoe	85	6,292	86	5,666	97	5,464	101	5,580
Tillsonburg	31	3,683	31	3,509	34	3,730	34	2,444
Onondaga	.....	.....	.....	.....	29	105	21	102
Blackheath	73	4,500	94	4,471	141	5,263	145	4,721
Dunnville	25	834	139	5,979	182	6,315	195	6,516
Selkirk	158	6,516	229	7,669	268	6,916	251	6,184
Total	372	21,825	579	27,294	751	27,793	747	25,547
Average Open Flow	.....	58	.....	47	.....	36	.....	34

The Tilbury Field

The Tilbury gas field is situated on the north shore of Lake Erie, forty miles east of Windsor. In 1906 it was discovered by the Leamington Oil Company while drilling for oil. This company is now the Canadian Gas Company.

About the same time the Volcanic Oil and Gas Company, in drilling on the Halliday lease, struck a gas well and from it laid a small-sized line to Chatham. Here it contracted with the Chatham Gas Company to distribute its output.

The Northern Pipe Line Company was then organized, and entered into a contract with the Leamington Oil Company to purchase sufficient gas to supply certain factories and all the domestic consumers of Wallaceburg; and it constructed a line to that place.

In 1909 the United Fuel Supply Company and the Ridgetown Fuel Supply Company were organized; each had secured leases in the field and was pushing development work. The United Fuel Supply Company made a contract with the Leamington Oil Company to purchase all of its gas other than that needed to supply Wallaceburg interests. It had also developed a supply of gas from its independent leases. A line was laid to Sarnia by this company, and the Sarnia Gas Company engaged to distribute the gas in that city under a percentage contract.

At the same time, the Volcanic Oil and Gas Company, having developed sufficient gas for the purpose, constructed a line to Windsor, and the Windsor Gas Company became the distributor under a percentage contract.

The Beaver Oil and Gas Company, from a small acreage in the field, supplied gas to Leamington. So rapid had been the development work throughout the field that in 1910 its limits were practically defined, although many inside locations remained to be drilled. It extended along the lake shore for nine miles, and averaged four miles in width running inland. Most of this area was owned and controlled by the Volcanic Oil and Gas Company, the United Fuel Supply Company and the Ridgetown Fuel Supply Company. Throughout the field their leases were intermingled, and in consequence offset wells were being drilled too closely. Under these competitive conditions each company had the incentive to produce and sell gas to the utmost capacity of its markets.

To eliminate wasteful competition, an amalgamation between these interests was planned and effected January 1, 1912. Included in this amalgamation was 60 per cent. of the capital stock of the Northern Pipe Line Company which had been previously acquired by the United Fuel Supply Company. This gave birth to the Union Natural Gas Company, which took over the assets and business of the Volcanic, the United Fuel, and the Ridgetown Fuel Supply Company. It was now thought that competition had been eliminated, and that the field was under the control and management of one company.

But in 1912 the Glenwood Natural Gas Company was organized by H. D. Symmes, and this company secured a lease on part of the Lake Erie front parallel to the gas field, and commenced the drilling of wells in the lake.

In 1913 H. L. Doherty and Company purchased the Glenwood Company, and also the Beaver Oil and Gas Company. The Doherty interests then organized the Southern Ontario Pipe Line Company, and built a line and transported gas to markets east of London.

Thus to-day the companies producing gas in the Tilbury field are:

Union Natural Gas Company.

The Glenwood Natural Gas Co. and Beaver Natural Gas Co. Associated.

The Canadian Gas Company.

The Pipe Line companies transporting gas are:

The Northern Pipe Line Company. (The Union Co. owns 60 per cent. of its stock.) This line gets its gas from the Canadian Gas Company.

The Southern Ontario Pipe Line Company. This company gets its gas from the Glenwood and Beaver Companies. It is owned by the Cities Service Company of New York.

The Union Natural Gas Company. The pipe lines operated by this company are owned directly by the Union Company, and are not subsidiaries, with the exception of the Northern Pipe Line, of which the Union owns 60 per cent.

The distributing companies for gas in the markets are:

At Windsor, The Windsor Gas Company. This company receives the gas at the city line from the Union Natural Gas Company and delivers it to consumers throughout its mains. The proceeds from the sales of gas are divided between the distributor and producer upon a percentage basis.

At Chatham, The Chatham Gas Company. Under the same plan as at Windsor, this company gets gas from the Union Natural Gas Company and distributes it in that city.

At Sarnia, The Sarnia Gas Company. In like manner this company acts as distributor for natural gas delivered to it by the Union Natural Gas Company.

At Petrolia: Here the Petrolia Utilities Company distributes for the Union Natural Gas Co., following the percentage division of receipts.

At Wallaceburg: The Wallaceburg Gas Company is distributor for the Northern Pipe Line Company.

At other small places supplied by the Union Natural Gas Company it owns the plants and distributes gas.

The Beaver Oil and Gas Company, Limited, sells gas to the town of Leamington on a percentage basis. The distributing plant in this town is owned by the municipality. Until recently most of the gas was sold at a flat rate per stove per month, regardless of the amount consumed. Now meters are installed for all consumers.

The Beaver Oil and Gas Company owns the plants and distributes gas in the towns of Kingsville, Wheatley, Romney, Merlin and Cottam.

The Southern Ontario Gas Company, Limited, owns the plants and distributes gas in a number of villages and townships west of the city of London. It also sells gas wholesale to the distributing companies in the cities of Brantford, Woodstock, Ingersoll, Paris and Galt. These distributing plants are owned and operated by companies under the same ownership as the Southern Ontario Gas Company.

This company formerly sold large quantities of gas to the Manufacturers' Gas Company, which distributed it to industrial users in the city of Hamilton. By reason of the orders of the Ontario Railway and Municipal Board, it is now doing only a small fraction of its former business.

Increasing Yield of Tilbury Field and Decreasing Pressures

	Million cubic feet	Average pressure
Waste (estimated)	2,000.0	
1907 Production	297.0	
1908 "	848.0	
1909 "	1,996.0	
1910 "	4,589.0	
1911 "	5,649.0	
1912 "	7,752.5	
1913 "	7,975.8	512 lbs.
1914 "	10,121.6	491 "
1915 "	10,819.1	475 "
1916 "	13,752.5	434 "
1917 (estimated)	15,000.0	368 "
1918		330 "

Decline in Wells of Union Natural Gas Co.

The original open flow capacity of 111 wells was 177,944,220 cubic feet.

In the summer of 1915 a measurement of the same wells showed an open flow capacity of 90,097,280 cu. ft. This is equal to .5063 per cent. of original capacity.

In the fall of 1916 an open flow measurement of 121 wells, whose original capacity was 168,502,581 cu. ft., showed a capacity of 55,090,261 cu. ft., or .3269 per cent. of original capacity.

This year eleven new wells were completed whose combined capacity was 13,952,127 cu. ft., which brought the Union field capacity up again to 69,042,388 cu. ft.

In 1917 the open flow measurement of 119 wells was 50,799,204 cu. ft. To this was added the production of 13 new wells, of 7,365,897 cu. ft., making the total capacity of 132 wells, 58,165,101 cu. ft.

In 1918 the open flow was 39,865,452 cu. ft.

Life of the Tilbury Field

G. R. Mickle, Mine Assessor of Ontario and natural gas expert, and other authorities, estimate the future life of the field to be fifteen to eighteen years, providing the remaining gas is conserved for household use and the operation of the wells conducted in a careful manner.

We would refer in this connection to Mr. Mickle's report on the natural gas situation in the counties of Kent, Essex, and Lambton, issued in 1916.

Salt Water

The great enemy of natural gas is salt water. Occurring in most gas fields, it underlies the gas, gradually rising as the pressure is lowered. Many gas fields have been ruined by salt water while the pressure was still comparatively high.

This occurred in the Essex field which was drowned completely within a period of sixty days while the pressure stood at about 250 lbs.

While there are many measures (such as installing pumps on individual wells) which will prolong the life of a gas field so threatened, none of them are of any avail unless the demand on the field is reduced to such a point that the flow of gas to the wells does not draw salt water with it. Pulling gas from a field beyond its reasonable capacity will almost inevitably end its production abruptly, and will seal up in the rock, beyond all hope of recovery, millions of feet of gas which would otherwise have been available for use.

These considerations apply with the greatest force to the Tilbury field, where the salt water menace has already made its appearance, and where the utmost care in operation is necessary if the field is to give up its remaining gas for the service of mankind.

Compressor Stations in Tilbury Field

In 1913 the producing capacity of the Tilbury field and the demand for the gas was so great that compressing stations were erected. The use of these stations is to compress the gas to higher pressures and so increase the capacity of the pipe lines.

In the winter of 1916-1917 the Southern Ontario Gas Company was carrying a pressure of 325 lbs. on its pipe line, and was handling a maximum of 14,000,000 feet per day. At the same time it was maintaining 160 to 175 lbs. pressure on the field lines.

At that time the open flow capacity of its wells was over 45,000,000 cubic feet per day. At the present time the open flow capacity of the field is about 19,000,000 cu. ft., from which about 6,000,000 feet per day can safely be taken.

The pipe line can carry this quantity of gas with a pressure of 125 lbs. at the field, and since the field can maintain this production against 125 lbs. pressure, it is unnecessary to operate the compressing station.

The same conditions are true of the Union Natural Gas Company's system.

The following are the total open flow capacities of the wells of the Glenwood Natural Gas Co. and the Beaver Oil and Gas Company:

1916	56,554,000 cu. ft.
1917	46,385,000 cu. ft.
1918	30,096,000 cu. ft.

The Essex Gas Field[1]

This field was opened in January, 1889.

There were numerous producing wells with a capacity of several million feet per day.

The first well at 1,020 feet struck a flow of ten million feet per day, and the rock pressure was four hundred and sixty pounds.

Another well sunk on the road by the Citizens' Gas, Oil and Piping Company of Kingsville, had a capacity of seven million feet per day.

[1] See "The Oil and Gas Fields of Ontario and Quebec," by Wyatt Malcolm; Geol. Survey Can., Memoir 81, 1915.

Then followed other wells of large capacity as follows:

On Lot 6, Con. 1, 6,422,000 at 1,030 ft.
On Lot 7, Con. 1, 5,877,500 at 955 ft.
On Lot 8, Con. 1, 5,700,000 at 990 ft.
On Lot 9, Con. 1, 7,000,000 at 950 ft.

In December, 1894, a pipe-line to Detroit was laid and gas supplied to that city as well as to Windsor and Walkerville; also to towns and villages in the vicinity. Gas was also piped through an unused pipe-line from Detroit to Toledo.

In 1901 the United Gas and Oil Company of Ontario, the chief operator, owned ninety-five wells, fifty-two producing, twenty-one abandoned, and twenty-two dry holes. Five wells were being drilled in.

The Essex field was about one mile wide and five miles long, stretching along the Lake Erie shore.

The field was apparently not as well managed as it should have been, and many of the wells became choked with salt water.

The decrease in pressure during the winter of 1900-1 alarmed the citizens of Essex, and the Government was petitioned to prevent export.

An Order-in-Council was passed in October, 1901, revoking the license to export, and the practice ceased. The supply then rapidly fell off.

The Windsor and Walkerville customers were notified that their supply would cease on April 1st, 1904, and in this year the field was practically exhausted.

Between February, 1895, and July, 1901, the Essex field exported to Detroit 9,639,355,600 cubic feet, and produced, outside of what large amount was wasted in the early operation of the wells, 22,500,000,000 cubic feet.

CHRONOLOGICAL SUMMARY

Opening of field	January, 1889	Fifteen Years.
Piped to Detroit	December, 1894	
United Gas had 52 producing wells	1901	
Pressures alarmingly decreased	1900-1901	
Export ceased	October, 1901	
Windsor and Walkerville supply ceased	April, 1904	
Field exhausted	1904	

9,639,355,600 cubic feet exported to Detroit	February, 1895	Six Years.
	1896	
	1897	
	1898	
	1899	
	1900	
	July, 1901	

Conclusions

Your Advisory Board have keenly felt the responsibility placed upon them, a responsibility that carries, with the recommendations we submit, the welfare and comfort of the gas-using public of Ontario, and what is equally important, the future life and stability of all the companies participating in serving natural gas to the people.

We have drawn freely upon the mass of data bearing upon the natural gas

industry in the United States. We have studied carefully the operation and results of the older gas fields of Ontario covering the past thirty years.

From this data, part of which is incorporated in this report, we are forced to the following conclusions:

That it is not only impracticable but impossible for the gas fields of Ontario and especially the Tilbury field, to yield, in the future, gas in the quantities which was produced prior to 1918.

That gas must be produced, transported, distributed, and consumed with the utmost economy; that also it must be restricted to household use, if the life of the field is to be prolonged, and the homes connected with the present pipe line systems are to continue to enjoy this incomparable fuel.

That while the fields were flush and the supply abundant, the home and factory were served with gas at prices lower than the cost of other fuels. Thus, the producers, transporters, and distributors shared with the gas-using public the benefits of their discovery.

Whatever earnings were made by the companies, a greater amount was saved by their customers which would otherwise have been expended for more costly and inferior fuel.

That if in future the remaining gas in the Ontario fields is conserved for domestic use the returns to the producers, transporters and distributors will be proportionately limited.

That the expense of operating a declining field is not lessened under this restricted output, but, on the contrary, constantly increases. It is obvious, then, that the gas companies cannot long continue to perform their respective functions—maintain equipment, explore for new fields, and give efficient service to the public, without a just price for their product.

It follows that an adjustment of rates must be made to meet these new conditions. The benefit of such adjustment will not be confined solely to the gas companies, but it will also be shared by the consumers.

APPENDIX

Waste of Natural Gas

The history of natural gas is a history of waste. Dr. I. C. White, State Geologist of West Virginia, says, "Of all the pieces of extravagance of which the American people have been guilty, perhaps their reckless and wasteful use of natural gas is the most striking—not the most important—but the most striking. This product, severely limited in quantity, which can last only a few years at most, has been handled by us as if it were illimitable."

C. R. Van Hise, in "The Conservation of Natural Resources of the United States," says, "In reference to natural gas, the great and pressing necessity is to stop its appalling waste by enacting and enforcing proper legislation. This ideal fuel should be used with the severest economy in order to prolong its life, which will be brief at best."

Natural gas, like all natural products which are utilized by man, must go through the processes of production, transportation, distribution, sale and consumption, or utilization. In the simplest case, which need not be considered here, the producer and consumer are identical, eliminating some of the intermediate processes.

Every one of these processes is accompanied by waste, as the operation of a machine is accompanied by friction. By proper design and construction, friction in machinery can be reduced to any desired minimum. In the same way waste of natural gas can be cut down. If a machine must be marketed at a low price, it is impracticable to make it as easy running as a similar mechanism selling at a higher price. For the same reason the waste in handling natural gas has always been greater than that of manufactured gas, which commonly sells for several times as much.

The waste in the early history of the natural gas business was inevitable from the circumstances which attended the development of the field. There are close analogies in the history of other industries. The pioneer settlers of this country cleared the forests from the land, and burned the logs and brush to get them out of the way. If lumber had been worth its present price, this would have been an appalling waste. But the imperative need was for land, and there was a seemingly inexhaustible supply of timber, so their action was logical and inevitable. The natural gas industry has progressed from a condition of abundance to one of scarcity in a fraction of the time required by the lumber industry, but the steps have been exactly the same.

Unfortunately there is one striking difference between the lumber and natural gas industries. Scientific forestry effects a perpetual production of timber. The best that can be done with natural gas is to so conserve the remaining supply that as little as possible of it will be lost, and to direct its use so that it may be made of the greatest possible service to the communities which enjoy its benefits.

The Waste Problem in United States

The Smithsonian Institution at Washington has issued a comprehensive bulletin on natural gas. This bulletin goes much more thoroughly into the subject than would be possible for this committee in the limited time at its disposal. The liberty has been taken of quoting from this paper certain paragraphs relating to the waste of gas. Sections which do not apply to Ontario conditions have as far as possible been omitted, and comments have in some cases been added.

True conservation is not hoarding, but the wise use of natural resources, and it implies not merely the preserving in unimpaired efficiency, but also a wise and equitable exhaustion with a maximum efficiency and a minimum waste. The heart of the natural gas conservation problem is the conflict between the present and the future. The individual land owner is interested primarily only in immediate present personal returns. That is, he is thoughtless and indifferent with respect to the future. The public—at least the domestic natural gas consumers, and the people dependent on natural gas for their cooking, heating and lighting purposes—are interested in conserving the supply and bringing about a slow, wise and economical exhaustion, so as to insure continuity of service for the future.

Conservation, therefore, demands intensive rather than extensive use, takes cognizance of equitable distribution, aims to bring about social justice, and means the greatest good to the greatest number—and that for the longest time.

Most of the supply and service problems of to-day are the inevitable result of waste in producing and handling natural gas. The annual reports of the Conservation Committee of the Natural Gas Association of America are stinging indictments of a criminal system, fostered by both the gas companies and the public, which has resulted in wasting more gas than has ever been utilized.

The various forms of waste may be grouped under drilling, well operation, transmission, and utilization operations.

Drilling Wastes:—

1. Not closing wells promptly:—Much gas is wasted on account of delay in closing wells, caused primarily by poor judgment and failure to supply material promptly. In many cases the rock pressure over quite a district has been materially lowered by the delay in closing properly a single large well in that section.

2. Improper Casing:—There is much underground waste by improper casing methods, which allow gas or water to migrate from their original strata into other strata. This is an especially important feature in the West Virginia fields, where in many instances several gas-bearing formations are superimposed with intervening barren formations.

3. Waste of gas to air:—As a result of improper casing methods gas frequently works up around the packer or into the casing above the packer and is wasted in the air.

4. Gas waste in well-drilling boilers:—Most gas burning appliances used in well-drilling boilers are crude and inefficient, and gas is handled as if it had practically no value and were of little use to other people.

5. Waste of gas in torches:—A large number of open-flame (flambeaux) torches are still in use. Not only is this an inefficient and therefore wasteful method of securing illumination at night, but in many instances the torches are not shut off during the day.

6. Offset wells:—The drilling of offset wells is not only frequently a waste of capital, resulting from over-drilling, but very frequently results in marked waste of gas.

7. Improper plugging:—Where a well is abandoned and the casing pulled, if the hole is not properly plugged, it may result in the ruination of other gas-bearing formations by the migrating of gas or water from one to the other, or the very great waste of gas leaking into coal veins or coming up and passing out into the air.

These sources of loss were important in the early days of the Ontario fields, but all responsible operators are now fully aware of them and do their best to keep them down to the lowest possible point.

Well Operation Waste:—

1. Wasting gas to get oil:—Where oil and gas are found in the same field it is quite a general practice for oil operators to blow off the gas, that is, waste it, in order to procure the oil. This is the principal cause of the depletion of many gas fields, and is responsible for a greater volume of gas waste than probably all other causes put together.

There is very little gas wasted in this way in Ontario at present.

2. Excessive blowing:—Where wells are blown into the atmosphere for water-freeing purposes, the gas must, of course, be wasted. However, in many cases the wells are blown longer than necessary, and in others it would be feasible to install siphons for the removal of the water so as to curtail this form of waste.

Most wells in Ontario are now equipped with siphons or pumps.

3. Salt water troubles:—In some instances salt water exists in the gas-bearing formation and in others it works in from other strata, due primarily to improper drilling and casing methods. This results in a large waste of gas when the wells must be watered to free them of the salt formation below in the tubing.

4. Too rapid lowering of the rock pressure:—The irregular or too rapid lowering of the rock pressure by exceedingly rapid production will always produce undesirable operating conditions, and must ultimately result in a large waste of the total amount of gas that might have been removed with more rational operating methods.

This last is the principal source of danger to the Tilbury field. The remedy is only partially in the control of the producer. The demand of the public must be reduced until the field can supply it with safety and efficiency.

Transmission Wastes:—

Gas leakage:—The difficulty in keeping gas joints tight is not ordinarily appreciated and results in an enormous waste from defective joints and minute openings in gas-carrying equipment. The laws controlling gas leakage may be stated as follows:

1. The relative leakage tendencies of any two fluids under the same conditions are practically inversely proportional to the square roots of their respective densities. Natural gas has a density of practically 0.64. With regard to air, the relative leakage of air and natural gas will vary as the square root of 1 and square root of 0.8, or as 1 is to 0.8. That is, the leakage tendency of natural gas will be 1 ÷ 0.8 equals 1.25 times that of air under similar conditions. Water has a density 819.5 times heavier than that of air; hence leakage tendency of natural gas in comparison to that of water at the same pressure is much greater than that of water. This accounts for the universal difficulty in keeping gas confined without leakage.

2. The quantity of leakage through a given opening will vary directly as the square root of the differential pressure.

3. Amount of leakage is independent of the quantity or velocity of gas passing through the main. In other words, the pressure remaining the same, the leakage will be just as much during the period of low gas consumption as during the period of high gas consumption.

4. A typical gas main joint coupling has four surfaces adjacent to the rubber and the metal where leakage may be possible. On a 16-inch main each coupler presents about 17 linear feet of such potential leakage surface. The magnitude of this in a large system is evident when we consider that about 270 couplers will be required to the mile, thus making 270 x 17 equals 4,590 feet of possible leakage surface to the mile of a 16-inch gas main.

The importance of this question of leakage cannot be overestimated. There are no exact figures obtainable, but it is probable that less than 75 per cent. of the natural gas produced in Ontario reaches the consumer's meter, and a large percentage of the gas metered to the consumer is lost in the house piping.

Until very recently the devices for measuring gas in large quantities were inaccurate and unreliable, but meters are now on the market which will measure any quantity of gas with any required degree of accuracy. In order to prevent the waste of gas through leakage, accurate measurement is necessary. Gas should, wherever possible, be measured from the fields to the pipe-lines, and from the pipe-lines to the distributing plants. In this way the leakage can be located and determined, and the effectiveness of such measures as are taken to remedy it will be apparent.

Utilization Wastes:—

Flat rate:—Much natural gas is still sold at a flat rate of so much per consumer, or so much for each fire or other fixture. This puts a premium on waste, and results in the destruction of an enormous amount of gas that might be conserved for more intelligent and appreciated future use.

Cheap gas for manufacturing:—When natural gas is sold at low prices for industrial use, there is no incentive to use the gas in an efficient manner, and it is therefore quite frequently used without regard to efficiency or conservation. This is probably the largest form of waste in connection with utilization of natural gas.

Free gas:—In many cases boom towns in the gas fields have held out the inducement of supplying either free gas, or the gas has been sold at ridiculously low prices for industries that would locate there. This feature has been especially troublesome in West Virginia, and has resulted in depriving many domestic consumers of an adequate supply of the best fuel available for household use.

In an extensive investigation of the amount of gas consumed by domestic consumers in West Virginia having free gas service privileges on account of having gas wells or gas lines on their farms, it was found that the average consumption per free consumer a year was 480 thousand cubic feet. This is a waste of at least 350 thousand cubic feet for each consumer a year. There are at least 4,400 free consumers in West Virginia, and at this rate of waste this item alone amounts to 1,540,000 M cubic feet a year. This is more than half the amount of gas used in Louisville. The following further emphasizes this form of waste:

Average annual consumption for each free domestic natural gas consumer in West Virginia, 480 M.

Average annual consumption for each domestic natural gas consumer in the United States, 100 M.

Average consumption for each domestic consumer at Louisville, 53 M.

These considerations apply with equal force in Ontario.

Carbon black:—This is a form of improper use rather than absolute waste. The carbon black industry in West Virginia uses 50 per cent. more gas than is furnished to all of the domestic natural gas consumers in that State.

There is no carbon black made from natural gas in Ontario.

Inefficient Use.

On account of the low prices that have prevailed, gas-appliance manufacturers have not been stimulated to the development of efficient gas-using equipment. There have been few improvements resulting in increased efficiency in the last fifteen years. In testing house-heating furnaces it has been found that:

1. The use of natural gas in the fire-pot of a coal furnace gives an efficiency of about 25 per cent.

2. The use of natural gas in the ordinary gas furnace gives an efficiency of about 35 per cent.

3. The use of natural gas in a correctly designed and built gas furnace where the construction conditions permit the fullest utilization of the heat in the gas, gives an efficiency of about 75 per cent.

In tests made by the Bureau of Standards, it was found that the ordinary incandescent mantle lamp where used with natural gas wasted nearly half of the possible heat that could be used if such lamps were designed for efficient operation on the high heating value natural gas as they give on the low heating value manufactured gas.

In tests made by the Department of Home Economics Ohio State University, the efficiencies of a natural gas range varied from 37 per cent. down to 13 per cent., while with a manufactured gas range, using natural gas, the efficiencies varied from 43 per cent. to 23 per cent.

Thermostat control:—Thermostats for controlling house-heating appliances are out of the experimental stage, and the large number in use demonstrates their reliability and usefulness. In addition to ministering to the comfort of the house occupants, they aid very materially in conserving the gas consumption by preventing over-heating.

Where natural gas is sold at low prices the practice is still all too common of lowering the temperature of an overheated room by opening a window rather than by lowering the gas fire.

Under present conditions the loss, whether by leakage or by inefficient or improper use, of a thousand feet of gas means to the public the loss of one million heat units of valuable fuel. But whether the loss falls upon producer, transporter, distributor, or consumer, it means to him the loss of so much money, and he will expend time and money in preventing or remedying the loss of gas only in proportion to the monetary loss to him. This is doubtless improper and unethical, but it is a condition which cannot be changed, and gas will continue to be wasted until an adequate incentive is provided for its conservation.

Prevention of Excessive Drilling

The discovery of every new gas field is invariably followed by a rush of prospectors and speculators. The persons or company first making the discovery may have used every care in protecting themselves by securing leases, but no matter how careful they may have been, there are always pieces of land here and there that have not been leased, and these often very close to the gas well just opened.

There are two distinct classes of persons in the gas industry, first the prospector, and secondly the speculator. The former invests his money in an honest effort to discover gas, from the returns of which he hopes to prosper. He sometimes risks all he has, and if he is fortunate enough to discover a new gas field, he is entitled to every reasonable protection. The man who is purely a speculator waits until the prospector has made the discovery, and at once sets about to reap a great measure of the benefits which belong of right to the latter.

Not only is the discoverer of natural gas or any other natural product entitled to proper protection, but in the case of natural gas one of the greatest, if not the greatest, loss it has sustained has been through excessive drilling resulting from

Drilling a gas well.

unfair and unwise competition. Many valuable gas pools have been ruined in a short time by the drilling of wells too close together, thus bringing about a premature exhausting of the supply. It has been thoroughly established that a too rapid depletion of a gas field materially reduces the quantity of gas that it will

First operation of tubing a seven million well, 3-inch tubing being used.

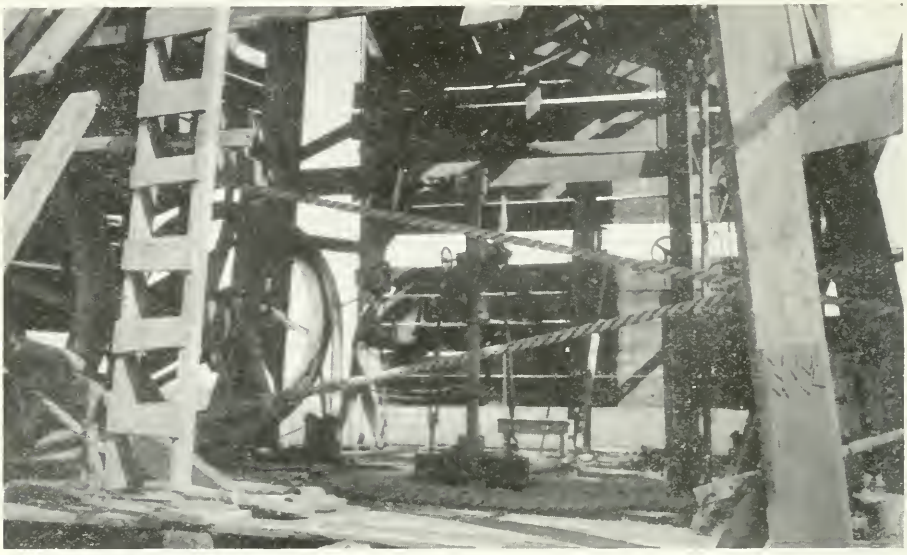
produce if judiciously handled. Water, the great enemy of natural gas, seems always to be waiting for the day when persons or companies start a gas war and rapidly exhaust the field pressure. That is the time when the water will rush in

and take possession, to the exclusion of nature's greatest fuel. Such conditions mean not only a great material loss to the gas companies, but a great injustice to the public, as well as a serious loss to the consumers of natural gas.

Swinging a length of 3-inch tubing to place over the high pressure gas flow.

"Bucking up" the tubing. "No sleep until the well is closed in."

We believe that suitable legislation might be adopted that would result advantageously to the gas companies and the public generally. With this object in view we have tried to bring to bear upon the subject both our observation and our experience. We appreciate the difficulty in laying down a hard and fast rule for the



Well tubed and closed in.

Gas well after derrick is removed. Ready to turn into the line.

control of matters of this kind, but we believe that the object to be attained is of sufficient importance to justify the establishing of a few simple restrictions in order to minimise this great waste of wealth, and at the same time afford a measure of protection to the prospector.

Prospecting for natural gas may be divided into two kinds, first the opening up of an entirely new field, and secondly, the developing of a gas field already fairly well defined. Some difficulty may be encountered in fully establishing what may be properly called "a new field"; distance, however, must always be considered when determining this question. Where new gas wells are opened sufficiently close to wells already in operation, to permit of the supply being delivered to points already supplied or capable of being supplied by such wells, the new wells should be treated in the same manner as the wells already drilled. On the other hand, if an entirely new field not adjacent to an old field is opened up, special consideration might well be given to the discoverers of gas so as to enable them to dispose of their product at a profit, without being placed under the same restrictions as a person or company operating in an old territory where the market is more accessible and fairly well defined.

We would suggest that no person or company be allowed to drill a gas well within one hundred to one hundred and sixty rods from any gas well drilled by any other person or company excepting by consent of the latter. This arrangement would afford reasonable protection to the prospector, and would also result in prolonging the life of the field, to the advantage of the public. If this plan should be adopted we believe reasonable consideration should be given to the farmer or farmers who might be prejudicially affected thereby, and the following suggestion might, we believe, meet such cases: Where a person or company is the actual lease holder at the time of drilling of a farm containing not less than twenty-five acres, and where such person or company is prevented drilling thereon, under the foregoing plan, the person or company being protected thereby might be required to treat the owner of such farm as if he or they had actually drilled thereon.

We realize that in the control of the gas industry, as well as all other public utilities, it is desirable to establish as far as possible a friendly relation between the producer and consumer, and to make only such regulations as will be most conducive to bringing about such friendly co-operation. In our suggestion herein we have endeavoured to give the greatest measure of consideration and protection to the prospector, the consumer and the farmer from the operation of whose lands the gas supply is almost entirely secured.

Adjustment of Rates

In view of the depletion of the present gas field, and the increased cost of operation owing to the low pressure and the pumping of the wells to keep them clear of salt water, the conservation of the gas as far as possible for domestic consumption, and the lengthening of the life of the gas field for domestic consumers, the price of gas in the past being low in certain localities, we believe that the prices should be adjusted commensurate with the extra expense, so as to make a fair return to the producer, transmitter and distributor.

In making an adjustment of rates, the interests of producers, distributors and consumers, together with the different localities affected, should be taken into consideration.

Enlarging on the above paragraph, we have conditions in Ingersoll, Woodstock, Brantford, Paris, Galt, and Hamilton, quite different from those in the western part, in Chatham, Leamington, Kingsville, Essex, Sandwich, Merlin, Ridgetown, Comber, Glenwood and Windsor. In the former places the prevailing price of gas at present is 45 cents net, while in the latter places it is 25 and 30 cents net. True, the pipe-line is longer in the former places than in the latter, but not to so large an extent as the difference in the price of gas would suggest. For example, in Windsor, which is 45 miles from the field, gas is 30 cents a thousand feet, without meter rent, while in Woodstock, which is twice the distance from the field that Windsor is, the price is 45 cents net and 17 cents meter rent. Taking the price of gas in Chatham as the standard field price, 25 cents, then Windsor is paying 5 cents for pipe-lines, while Woodstock and places east are paying 20 cents for their pipe-lines, and also meter rent.

The standard rate which may be fixed for any municipality should include all service, meter or other charges in connection with such meters. We have the following meter rents and service charges at present:

Town.	Meter Rent.
Windsor	Nothing.
Chatham	$0.20 per month.
Ridgetown	1.00 per year.
Hamilton	.50 per month.
Essex	.20 per month.
Kingsville	1.00 per year.
Leamington	1.50 per year.
Ingersoll	.15 per month.
Brantford	.20 per month.
Woodstock	.17 per month.
Galt	.10 per month.
Paris	.10 per month.

A glance at the above figures should be sufficient to show that if any service charge is made it should be added to the price of gas, after due consideration is given to all concerned as between distributor and producer.

When adjusting any rate the fact should be considered that there are three companies operating in the western fields having three sets of operators, three sets of inspectors, and three sets of other employees, being paid out of the profits of the gas fields and indirectly by the consumer. In comparing natural gas with coal as fuel necessary for domestic use, we find in G. R. Mickle's Report,[1] page 5, that 24,000 feet of gas is equal to a ton of coal, and the following relation between prices can be seen, viz.:

Natural	Gas	at	10c.	per	1,000	cubic	feet	equals	Coal	at	$2.40	per	ton.
"	"	"	15c.	"	"	"	"	"	"	"	3.60	"	"
"	"	"	20c.	"	"	"	"	"	"	"	4.80	"	"
"	"	"	25c.	"	"	"	"	"	"	"	6.00	"	"
"	"	"	30c.	"	"	"	"	"	"	"	7.20	"	"
"	"	"	35c.	"	"	"	"	"	"	"	8.40	"	"
"	"	"	40c.	"	"	"	"	"	"	"	9.60	"	"
"	"	"	50c.	"	"	"	"	"	"	"	12.00	"	"

[1] The Natural Gas Situation in the Counties of Kent, Essex and Lambton, 1918, p. 4.

Comparing the above figures with the prices paid for coal in the various municipalities using gas and coal, we have the following table:

Municipality	Miles from the field	Price Paid for Gas	Average price of coal for last five years	Meter rent paid for service charges
		c.	$ c.	$ c.
Windsor	45	30	10 00	None
Chatham	20	25	"	.20 per month
Ridgetown	25	25	"	1.00 per year
Essex	30	25	"	.20 per month
Kingsville	30	25	"	1.00 per year
Leamington	20	25	"	1.50 per year
Ingersoll	90	45	"	.10 per month
Woodstock	100	45	"	.17 per month
Paris	115	45	"	.10 per month
Brantford	130	45	"	.20 per month
Galt	150	45	"	.10 per month
Hamilton	150	.....	"	.50 per month

The above figures and facts give ample proof that an adjustment of the price of natural gas in the various municipalities using same is necessary, especially as natural gas will not be used for general heating if its price is much higher than that of coal required to do the same work. Therefore, when there is a sufficient supply of gas for all domestic purposes, the price of coal and other fuels should be taken as one of the factors in fixing the rates, excepting in the Welland and Haldimand fields, in which the gas supply has already passed the point where the price can be made to conform to that of other fuels.

Where any gas is allotted for uses other than domestic, the price charged for same should be equal to that charged for domestic use.

Basis for Rate Adjustment

For a number of years there has been a country-wide demand throughout the United States by public utilities companies for higher rates. This has led to careful search for correct methods on the part of public service commissions, courts, and other authorities dealing with the subject.

At first some confusion of ideas arose because of requests for increases based on capitalization, bonded indebtedness, comparison of service rendered with like service, and many other grounds peculiar to the business of the applicants. Many companies were over-capitalized, and a few were under-capitalized. Some were bonded to the limit: others had no indebtedness.

In the United States the courts and public service commissions have everywhere recognized the necessity of giving relief to utility corporations whose earnings were insufficient to enable them to give satisfactory service to the public; and it was also held that every company was entitled to earnings from its business.

This broad principle has been adopted, and has been endorsed and sustained by courts and public service commissions. Its simple directness needs no explanation, and its fairness is beyond question.

Every public utility company is entitled to a reasonable return upon the value

of the property actually used in the public service as determined by competent appraisal.

In support of this principle the following cases are cited:

In the case of the Board of Trade of Malone *vs.* Mountain Home Telephone Co. before the Public Service Commission, 2nd District, New York, reported in Volume V of the reports of the Public Service Commission, 2nd District of New York, page 74, the Commission unanimously decides (see pages 81 and 82) as follows:

> The Company is entitled to a reasonable average return upon the value of the property actually used in the public service, and the necessity for making reservation out of income for surplus and contingencies must also be considered. The complainant desired to show that a large part of the capitalization of the Adirondack Home Company did not represent money actually paid. This evidence was rejected on the ground that the question before the Commission was whether the rates yielded more than a *fair return on the actual value of the property*, not whether they yielded a return upon the *present* or *past* capitalization. The complainant also contended that a large portion of the present property of the Mountain Home Company was built up out of gifts made to the Adirondack Home Company or to Ward, and out of the income of the Adirondack Company. Inquiry into this was also excluded by order of the Commission made September 30th, 1915, wherein the Commission held that the basis for rate-making must be the *value* of the *property used* in the *public service*, and that it is immaterial whether that property was acquired by the issuance of capital, out of income, or otherwise. The first inquiry must therefore be as to the actual present value of the property of the respondent devoted to the public service.

Re Exeter, Hampton & Amesbury Street Railway Case, D-481, May 28th, 1918.

The Commission, in approving proposed fare schedules, reduced the fare zones of the Company from Exeter to Hampton Beach from 4 to 3, and increased the rate from 7 to 10 cents. The Commission said:

> The property has never been a paying proposition. It is an inexorable law of economies that capital will not flow to an undertaking which has demonstrated that it cannot be made to pay the investor a fair return. In this particular case the stockholders not only have not received a fair return, but have received no return at all. The increased costs of operation for the present year over even the abnormal costs of last year make the financial outlook for this company anything but cheerful. In this extremity, the Commission is inclined to give the company great latitude in the establishment of rates in the hope that it may hit upon some schedule which will bring about the necessary relief to prevent the loss altogether of this service to the public. It is perfectly apparent that if enough revenue cannot be derived to pay operating expenses, the upkeep of the property, taxes and interest charges, besides the fair return to the stockholders, the company must necessarily eventually go out of business.

We quote also a decision of the Railroad Commission of the State of California in the matter of an application by the Pacific Gas and Electric Company for an order increasing rates for manufactured gas. The case affected upwards of 50 cities and towns in the State, including San Francisco.

OPINION.

> Edgerton and Devlin, Commissioners:—
>
> These proceedings together involve the fixing of just and reasonable gas rates for all the territory served by the Pacific Gas and Electric Company outside of the city and county of San Francisco, other than for wholesale service of gas to the city of Palo Alto.
>
> There is here presented an emergency in the financial condition of the company. The marked and sudden increases in the costs of producing and distributing gas have resulted in such a diminution of the net income of the company as to seriously embarrass it unless is had through an increase of rates. These increases in costs have been wholly beyond the control of the company.
>
> The principal item is oil used in the manufacture of gas. The price of this commodity is unregulated, and apparently advances in price are made at the option of the large oil

producers. These large producers will make no contracts at fixed prices for oil, hence gas companies such as applicant are unable to avoid paying whatever price is demanded.

This oil is absolutely essential to the manufacture of gas, and as the producers of the oil increase their price, gas companies must either suffer the loss caused thereby, or rates paid by consumers of gas must be increased.

The gas companies cannot absorb this extra cost and remain sound financial institutions capable of properly serving the public. Therefore this Commission has no choice other than to place this additional burden upon consumers.

We suggest that now, while it is at all possible to increase rates to take care of the mounting costs of producing gas and still fix rates which are possible for consumers to pay and continue the use of gas, nevertheless, it is easily possible that unless steps be taken to regulate the price of oil we may be confronted with a condition where gas rates can no longer be substantially increased, and the companies will be left in the condition of serious financial jeopardy.

Wages of employees have been increased and may be increased still further. This is to be expected, because the cost of living has increased to such a marked extent that the managements of utility companies cannot and should not refuse reasonable increases of wages to meet living conditions, as well as to meet competitive labour conditions.

The costs of practically all materials used in the manufacture and distribution of gas have increased, and there is no assurance that still further increases will not be made.

The above considerations clearly establish this application as an emergency proceeding. The war has produced abnormal business conditions which affect the business of producing and distributing gas, as it has affected all other business, and where the utility service is under regulation and the prices at which the service is sold to the public are dictated by public authority, the companies are helpless, unless public authority will extend prompt relief.

Entirely aside from the question of justice and fairness to the owners of these utility properties, it is seriously to be considered that, unless the public utility companies are maintained in a reasonably sound financial condition, they will no longer be able to serve the public efficiently, as it is a demonstrated fact that a weak and staggering company is incapable of producing good service.

The value of properties used in the service of gas in the Vallejo District, as of January 1st, 1915, is set forth in Decision No. 2444, Case No. 638, decided June 4th, 1915. The value of the properties in the Marin District, as of June 30, 1914, is set forth in Decision No. 2460, Case No. 544, decided June 27th, 1915. In Decision No. 2530, Case No. 665, decided June 26th, 1915, no finding of the value of the properties of the Company used in the service of gas in Los Gatos was made, but there is evidence in this proceeding valuations by both the Company's and the Commissioner's engineers, as of December 31st, 1914. In Decision No. 2572, Case No. 478, decided July 8th, 1915, the Commission made its findings of the value of the property of the Company used in the service of gas in the city of San Jose and suburbs, as of December 31st, 1913. In Decision No. 4039, Cases No. 734 and No. 935 and Application No. 2419, decided January 20th, 1917, the Commission reviewed the gas rates in the Petaluma and Santa Rosa Districts of the Company, and the evidence in these proceedings includes the valuations made by both the Company and the Commission's Engineering Department.

It was agreed in the hearings herein that the evidence submitted in these earlier proceedings be considered as part of the record of the matter now before us.

There is also before the Commission in this proceeding a valuation of the Sacramento gas properties of the Company made by Mr. E. C. Jones, which has been reviewed by the Commission's Engineering staff.

In Cases No. 785 and No. 990 and Application No. 3092, a joint valuation of the generating and transmission properties of the Company in the Alameda County District was made by Mr. E. C. Jones, representing the Company, and Mr. G. S. Jacobs, representing the Commission's Gas and Electric Department, which also included the distribution properties in San Leandro, Hayward and contiguous territory, and in the city of Richmond and suburbs.

For all properties located in other cities and towns included in these proceedings, the Company has submitted the valuations made by J. C. White Engineering Corporation, as of December 31st, 1911, and has filed in evidence statements showing the net additions and betterments according to its books in all these districts, from the dates of former valuations up to and including the net additions and betterments for the year ending December 31st, 1917.

In addition to the above, the Company has submitted evidence as to the value of the lands used in gas operations, of the general capital of the Company pro-rated to the Gas Department, and estimates of working capital and materials and supplies for the year ending August 31st, 1918.

There is before us, therefore, sufficient evidence to fix the valuations of the properties for the purpose of these proceedings.

End of Part I.

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TWENTY-EIGHTH ANNUAL REPORT

OF THE

ONTARIO BUREAU OF MINES, 1919,

BEING

VOL. XXVIII., PART II.

Abitibi-Night Hawk Gold Area

By

C. W. KNIGHT, A. G. BURROWS, P. E. HOPKINS AND A. L. PARSONS

Larder Lake Gold Area

By

P. E. HOPKINS

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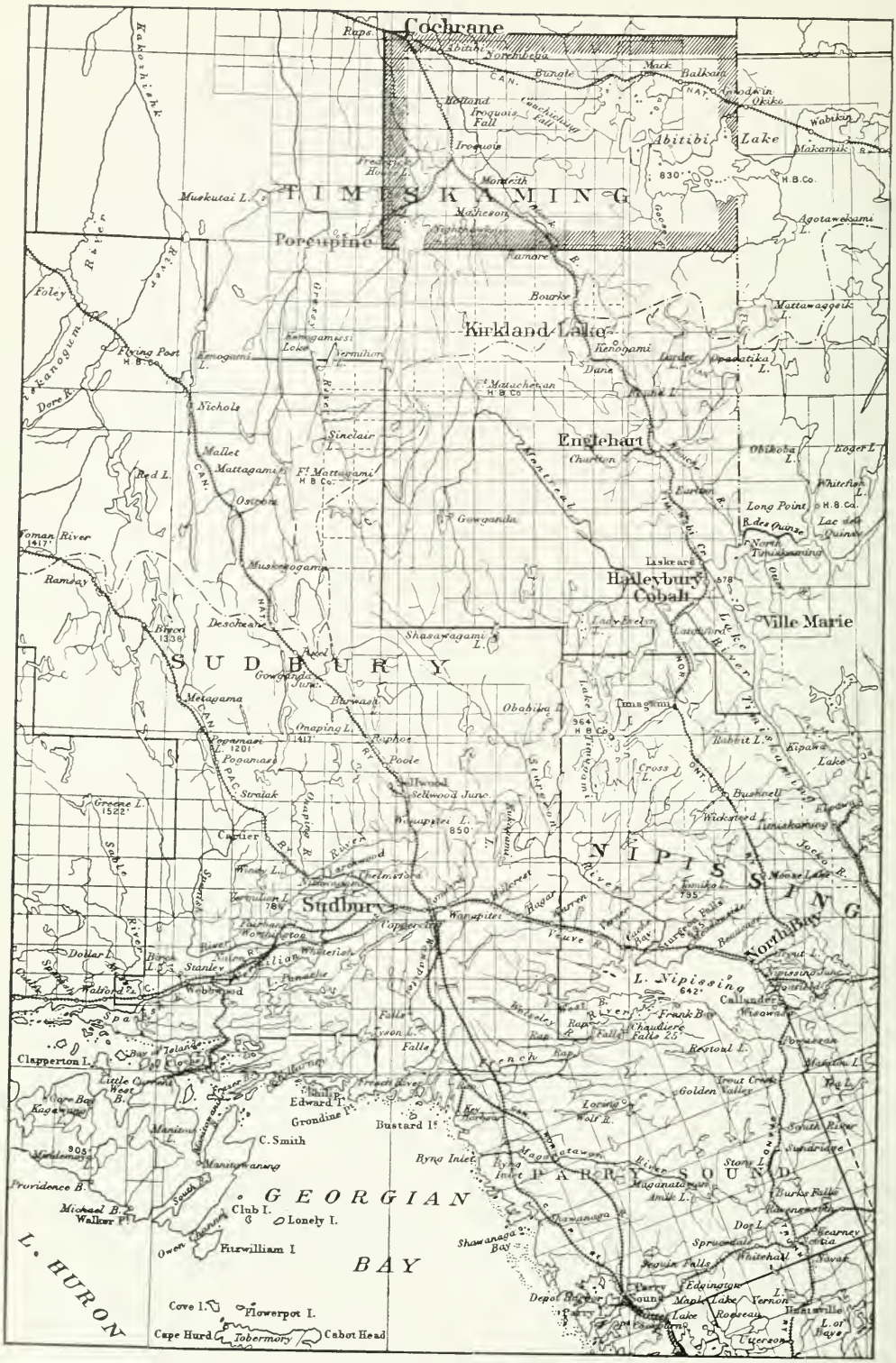

Key plan of part of Northern Ontario, scale 35 miles to the inch, indicating the location of area (hatched) embraced by geological map No. 28b accompanying this report.

ABITIBI-NIGHT HAWK GOLD AREA

District of Timiskaming

By C. W. Knight, A. G. Burrows, P. E. Hopkins and A. L. Parsons

Introduction

The search for gold in northeastern Ontario has revealed a widespread region in which Keewatin greenstones [1] of volcanic origin constitute the predominant rock. Prospectors have found by experience that gold-bearing quartz veins occur more abundantly in these ancient greenstones than in the vast stretches of granitic rocks which are so common in the Province of Ontario. It has been further discovered that, while gold deposits occur mainly in these greenstones, they are, at the same time, more or less closely associated with intrusions of acid porphyry or granite.

The greenstone areas of northeastern Ontario have already yielded great wealth and prosperity to the Province. Porcupine, which, although discovered in 1909, really only began to produce on a substantial scale in 1912, has yielded more than forty-four million dollars in gold up to the end of 1918, while Kirkland Lake, which lies about 60 miles southeast of Porcupine, has also produced important quantities of the precious metal.

In view, therefore, of the importance of having geological maps and reports of those parts of the country which are made up chiefly of greenstones, the geological staff of the Ontario Bureau of Mines, during the field season of 1918, devoted its attention to mapping an area which lies between Lake Abitibi and Night Hawk lake in the district of Timiskaming, Fig. 1. This area is immediately east and northeast of Porcupine, while to the south about 20 miles is the gold area of Kirkland lake.

Much of the area which we mapped, particularly that part at the east end, was practically a *terra incognita* in respect of geological information; but economically it was already of importance owing to the discovery a few years ago of the Croesus deposit in Munro township. At this mine some of the richest gold quartz ever found anywhere in the world was produced. Then, at the west end of the area, there is the well known Alexo nickel mine which has continued to yield quantities of nickel ore.

It may be added that in the area under consideration, and in nearby parts, there are immense forests of spruce and other pulpwood which have brought about the establishment of one of the most important pulp and paper industries in the world. The plant at Iroquois Falls, owned by the Abitibi Power and Paper Company, is said to be one of the largest of its kind anywhere.

[1] The word greenstone is here used in a very general sense to signify the most prominent type of ancient volcanic rocks occurring over wide areas. Usually near the ore deposits, as at Porcupine, such rocks have been largely altered to schists, and contain much secondary carbonate, sericite, and other minerals, the rocks having a light greenish or greyish colour.

Acknowledgments

During the field season we had the efficient assistance of the following gentlemen, namely: A. W. Carlyle, R. B. Crompton, J. F. Davidson, D. E. Kerr-Lawson, J. L. McCarthy, and A. B. McKechnie. We take pleasure in thanking these gentlemen for their interest in the work.

Wherever we went we were given hospitality by the mining companies and prospectors, and we acknowledge with thanks the many courtesies shown to us. We particularly desire to thank the Abitibi Power and Paper Company for their kindness at all times. Thanks are also due J. H. Hough, Mining Recorder, Matheson.

The excellent office work in preparing the geological maps and drawings accompanying the report was done by W. J. Bell and P. A. Jackson under the supervision of W. R. Rogers, topographer of the Bureau of Mines.

The chemical analyses and assays in connection with the report were made by Messrs. W. K. McNeill and T. E. Rothwell of the Provincial assay office.

Access to the Area

The westerly part is traversed by the Timiskaming and Northern Ontario railway, and the northerly part by the Canadian National railway. The most convenient station for the southwesterly part is Matheson, from which town there are roads to the mining camps in Munro, Beatty, Coulson and Hislop townships, and a good water route by the Black and Abitibi rivers to Rickard and adjoining townships.

The townships of Holloway and Harker, commonly called the Lightning River area, in the southeast part of the map-sheet, can be reached by a road from Matheson by way of the Croesus mine, a distance of about 40 miles, the last 15 of which are almost impassable in wet weather. A more convenient means of reaching the Lightning River area is by way of the National railway from Low Bush or La Reine stations. Low Bush is convenient to the townships south of Lower Lake Abitibi, and La Reine to those south of Upper Lake Abitibi. Gasoline boats and steamboats of the Abitibi Power and Paper Company make frequent trips from La Reine to the supply depots on the Mattawasagi (Teddy Bear) and Lightning rivers. From the forks, three miles south of the depot on Lightning river, there is a good trail six miles in length to the Howey-Cochenour-Willans claim in Holloway township.

Topography and Physiography

The area, with the exception of the southeast part of the map-sheet, is one vast undulating clay plain, broken here and there by depressions caused by the erosion of streams, and by a few prominent ridges or isolated hills of rock or sand. The plain lies on the James bay slope and has an altitude of 875 to 950 feet above sea level. It is now spoken of as a portion of the great clay belt of northern Ontario and is believed by A. P. Coleman to have once been the bottom of a vast glacial lake, named by him Ojibway. Jos. Keele, on the other hand, suggests that there were several old glacial lakes with intervening boulder clay and other glacial deposits. As stated later in the report, the writers regard Abitibi and

Fig. 2.—Scene in the area south of Upper Lake Abitibi, looking southeasterly from Mount Smollet.

Fig. 3.—Scene on Abitibi Lake, looking northeasterly from Mount Smollet.

Night Hawk lakes as having been once united, in which case there was at any rate a glacial lake of considerable size. The Frederick House river, rather than the Abitibi, occupies the principal valley above the junction of these two streams, supporting the contention of the writers that the outlet of both lakes may have been formerly by way of the Frederick House river. The drift is of glacial and recent age, and consists of boulder clay, lake clay, sand, gravel, peat and moss, which are described later under the Pleistocene.

The southeast part of this area is somewhat different from the undulating clay plain just described. Here the country is more rugged and the surface less regular, with a greater number of rocky ridges and hills. While lake clays and sands occur along the valleys of the rivers, most of the drift is boulder clay, sand and gravel of glacial origin.

Lying in the vast plain are three large lakes, viz: Abitibi, Night Hawk and Frederick House, with elevations of 879, 895 and 890 feet respectively above sea level. These lakes were much larger at one time, but are now shallow, averaging about 15 feet in depth. Since the lakes, rivers and streams are usually in clay the waters generally have a turbid appearance, due to finely suspended clayey particles. All the other lakes of the area are usually less than two miles in length, with the exception of Trollope and McDiarmid lakes, which are two and one-half miles long and have clear water. The small lakes and streams in the sandy areas such as Warden, Munro, McCool, Michaud and the east part of Garrison townships, have beautifully clear water, and often contain numerous small speckled trout. In the clay plains back from the rivers there are poorly drained areas containing large muskegs and peat bogs, which are also remnants of shallow lakes, and now the sources of many small streams. The area is drained by the Abitibi river and its many tributaries, of which Frederick House is the largest. These rivers have cut into the plain as much as 100 feet, the valleys being narrow and V-shaped. At a short distance from the rivers, usually under one-quarter of a mile, the general level of the plain is reached.

Rising above the drift plain in places are rocky ridges, the most conspicuous being the Ghost range, a prominent feature between the Ghost and Lightning rivers. The range is five miles long, east and west, and about one mile wide. It includes several prominent hills, the highest of which is near the Ghost river and is 1,540 feet above sea level, or 660 feet above lake Abitibi by aneroid. This is one of the highest hills in northern Ontario. Other high hills near the south shore of Abitibi lake are Mount Smollett, 1,315 feet, a conspicuous conical hill to the west of the Lightning river: Mount Goldsmith, 1,290 feet, just east of Lightning Point; and Burnt Hill, 1,295 feet, two miles south of the lake. There are also several prominent hills in the west part of Marriott township, in the vicinity of the III-mile post between Marriott and Holloway townships. Hills of lesser prominence occur in parts of Holloway. In Garrison township there is a conspicuous ridge of hornblende granite that occurs along the road from Matheson to Holloway township. Splendid views of the surrounding country are often obtained from the high hills.

An area of almost continuous rock exposure, 50 square miles in extent, occupies the southern portions of Coulson and Warden townships, the northeastern half

of Beatty township and most of Munro township. The three highest hills in this part are as follows: a basalt hill, 350 feet high, in lot 6, in the fifth concession of Munro; a diabase hill, 350 feet above the Shallow river, in lot 11, in the sixth concession of the same township, and a pillow lava hill, 300 feet high, having the appearance of an old volcanic cone, in lot 4, in the first concession of Coulson. The southern half of Knox township is mostly rock, the prominent peaks being in lot 3, in the second concession; lot 5, in the first concession; and lot 8 in the second concession. Part of the southwest corner of Bowman township is extremely rocky, some of the hills in lots 9, 10, 11 and 12 of the first concession being 300 or 400 feet high. Other isolated rocky peaks worthy of mention are the pillow lava hill projecting through the clay, 200 feet above Abitibi river, in lot 11, in the fifth concession of Teefy; the pillow lava hills rising 250 feet out of the sand in Calvert, from which one can see for miles across the vast plain; the pillow lava rising out of the sand in lot 4, in the first concession of Wilkie; and

Fig. 4—Perry lake, Michaud township.

the Keewatin hills in lot 6 in the sixth concession of Hislop, and lot 8 in the fourth concession of Guibord. From a rhyolite-andesite hill at the Alexo mine and from the hills in the southwest part of Bowman township one can see the town of Iroquois Falls and the rock and sand hills in Calvert township. There is considerable rock in both Clergue and Walker townships in the vicinity of Monteith.

Fish and Game

The excellent transportation facilities afforded by the Canadian National railway have resulted in a thriving fishing industry being established on Lake Abitibi. Whitefish, pickerel, pike and suckers, caught mostly in pound nets, are shipped in a fresh condition packed in ice to Montreal, Toronto and New York. While most of the rivers and lakes with turbid water are not suitable for fishing with rod or troll, the clear-water streams flowing through the rolling sand and gravel plains of Michaud, Garrison and other townships in the central part of the area contain small speckled trout, affording excellent rod fishing. Sturgeon are caught in the Frederick House and Abitibi rivers, but have not been reported as going above Couchiching falls into Abitibi lake.

Moose were seen by members of the party in various parts of the region, particularly in the marshy flats on the lower stretches of the Ghost and Lightning rivers. Red deer are reported in the vicinity of Matheson and on the sand plains of the central area. Bear are plentiful. Rabbits and partridge, that have been very scarce for the past few years, are again becoming numerous.

Forests and Forest Fires

The very severe forest fire of the 29th of July, 1916, that caused a disastrous loss of life, burned over 650 square miles of the south central part of the map sheet. The clean burns occured usually on the sandy and rocky portions and on the old partially-burned areas. For instance, in the sandy townships of Michaud and McCool, about 37 square miles have been burned so clean that there is no difficulty in travelling either on foot or in a wagon. The forest has been burned off

Fig. 5—Meadow in Holloway township, showing new growth of tamarac with spruce forest in background.

cleanly in the greater parts of the following townships: Michaud, McCool, Munro, Warden, Hislop, Beatty, and Carr; and in smaller parts of Garrison, Milligan, Guibord, Coulson, Wilkie, Bowman, Clergue, and Calvert townships. In many places the partially-burned trees have been blown over, making travelling in these parts exceedingly difficult. In Michaud and McCool about 23 square miles are of this character—"slash." Where the area has escaped the recent forest fires there is a mixed growth of timber of the usual varieties met with in northern Ontario. On the rolling clay ridges, particularly along the river banks, there are trees of good size, white spruce, birch, poplar, balm of Gilead, and balsam. Where the soil is sandy there are usually jack pine of fair size suitable for ties and lumber. Scattered here and there in the area are a few red and white pine. In many of the clay flats back from the rivers there are groves of black spruce, excellent for pulpwood. Cedar, ash and small soft maples are occasionally seen. There is a growth of young tamarac trees up to

20 feet in height in some of the swamps and beaver meadows, Fig. 5. These trees are in a flourishing condition, and if preserved from fire will replace the large tamaracs that were destroyed by an insect pest, the larch saw fly, some years ago. The area east of the Timiskaming and Northern Ontario Railway, along the Abitibi river and lakes, and along the Canadian National railway from Hughes to the Ontario-Quebec boundary, forms the timber reserve of the Abitibi Power and Paper Co. The company has already cut pulpwood in various parts of its reserve. During the summer and fall of 1918 large supply depots were established on the Mattawasagi (Teddy Bear) and Lightning rivers, Fig. 6, and the company had begun to cut pulpwood in the virgin area south of Upper Lake Abitibi.

The muskegs or peat bogs which occupy approximately three per cent. of the area are almost treeless, or contain small black spruce, an inch or so in diameter, which as the bog is left behind grade gradually into larger trees.

As a result of forest fires many of the surveyors' posts have, unfortunately, been destroyed.

Fig. 6—Pulpwood camp on Lightning river; Abitibi Power and Paper Company.

General Geology

The rocks in the area mapped by us in 1918 are rather monotonous in character and consist mainly of greenstones. We have divided the formations into two divisions, the older of which is the Keewatin series, and the younger a series consisting of intrusive rocks which cut the Keewatin.

The Keewatin is made up of basic lavas, mainly basalts or andesites, together with a few acid lavas which we have called rhyolites. We were fortunate in discovering in the township of Holloway, about 10 miles south of Upper Lake Abitibi, an area of Keewatin rocks which was so little altered that we were able to work out a series of lava flows some 4,400 feet in thickness and composed of at least 14 flows, varying in thickness from a minimum of 27 feet to hundreds of feet.

Closely associated with the Keewatin, although not occurring in great volume,

is a sedimentary series composed of chert, slate, greywacké, quartzite, conglomerate, tuff, agglomerate and iron formation. We are satisfied that the iron-formation, tuff and agglomerate belong structurally down in the Keewatin. We are, however, in doubt regarding the stratigraphic position of the other members of this sedimentary series in Beatty and Munro townships, namely, the chert, slate, greywacké, quartzite and conglomerate, although we believe that these rocks are, on the whole, closely related to the Keewatin. At the same time we recognize that some of the conglomerates and other rocks may belong to the Timiskaming series.

The intrusive rocks, which cut the Keewatin and constitute our second division, include granite, syenite, pegmatite, quartz-porphyry, feldspar-porphyry, serpentine, peridotite, pyroxenite, diabase and gabbro. Little is known about the age relationships of these various intrusions, one to another, since we rarely found them in contact with each other. For instance, we do not know the age relationship between the large granite area north of Upper Lake Abitibi and the great intrusion of diabase which comprises Ghost mountain, south of Upper Lake Abitibi. In a general way, however, our work seemed to show that the first intrusions following the Keewatin lava flows consisted of diabase, gabbro, serpentine, peridotite and pyroxenite. These intrusives are probably of pre-Algoman age, and in this respect resemble the lamprophyre and diabase intrusions at Cobalt that are older than the Algoman (Lorrain) granite, and the lamprophyre at Kirkland lake that is older than the feldspar-porphyry and syenite. These basic rocks were then followed by great intrusions of granite, together with dikes of quartz-porphyry, feldspar-porphyry and pegmatite. Finally, all of the rocks were cut by dikes of fresh diabase which resemble the Keweenawan quartz-and olivine-diabase at Cobalt and elsewhere.

The rocks and unconsolidated materials of the area may be conveniently subdivided according to the following table:

TABLE OF ROCKS IN GOLD AREA BETWEEN LAKES ABITIBI AND NIGHT HAWK.

	PLEISTOCENE.
RECENT AND GLACIAL	Sand and gravel, peat. Stratified clay, boulder clay, etc.
	PRE-CAMBRIAN.
INTRUSIVE ROCKS	Quartz-diabase and olivine-diabase dikes (Keweenawan?). Granite, feldspar-porphyry, quartz-porphyry, pegmatite (Algoman?). Serpentine, peridotite and pyroxenite (pre-Algoman?). Diabase and gabbro (pre-Algoman?).
	Intrusive Contact.
KEEWATIN	Chert, slate, greywacké, quartzite, conglomerate, iron-formation.[1] Basalt, diabase, dacite, andesite, rhyolite, pillow lava,[2] hornblende, chlorite and carbonate schists. (Included with these rocks are some agglomerate, tuff, slate, and iron-formation bands which were too narrow to differentiate in mapping.)

[1] Some of these sediments may belong to the Timiskaming series.

[2] The stratigraphic position of the basalt and rhyolite lava flows in Holloway township is not certainly known. Until their age is definitely proved we prefer to place them in the Keewatin series.

Keewatin

The Keewatin series in Ontario has hitherto defied attempts to unravel its structure. The rocks were generally so badly altered and changed to schists that it was found impossible to apply stratigraphic methods to them. The series appeared to be a chaotic tangle of igneous rocks—a hopeless complex devoid of any regular sequence. It was of course believed that the rocks were of volcanic origin and were therefore lava flows, since in many localities in northeastern Ontario volcanic characteristics, such as amygdaloidal textures and pillow structures, were frequently met with. The rocks, however, were so metamorphosed that no workers had succeeded in solving the problem of their structure.

This was our understanding of the Keewatin series when we began our work in the area in the spring of 1918. During the first half of the field season we travelled across mile after mile of amygdaloids, pillow lavas, basalts and other volcanic rocks, and it appeared for a time that we would not be able to make head or tail out of the complex. Finally, however, we began more detailed work about 10 miles south of Upper Lake Abitibi, in the southwest part of Holloway

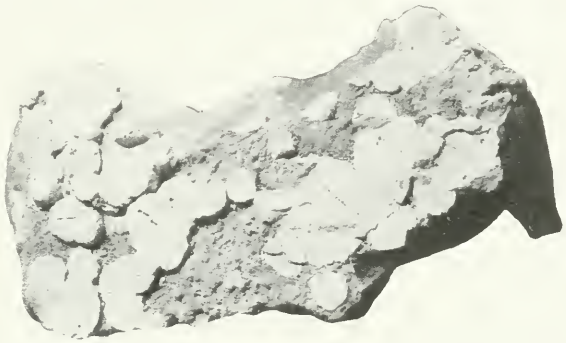

Fig. 7—Weathered surface of spherulitic lava, one-half mile southwest of Howey-Cochenour-Willans gold prospect. Four-fifths natural size.

township in the vicinity of one of the gold discoveries known as the Howey-Cochenour-Willans prospect. Here the rocks were in an unusual state of preservation, and we discovered that the Keewatin consisted of an orderly succession of lava flows which could be mapped. The finding of these flows is of unusual interest. It serves as a key to the unravelling of the Keewatin series, and, we hope, may lead to a better understanding of these rocks. We have described the flows in Holloway township in some detail in following paragraphs.

It is probable that these vast outpourings of lava have come to the surface through great fissures in the crust of the earth, since no volcanoes have been discovered anywhere in northeastern Ontario.

The Keewatin rocks extend easterly into the Province of Quebec, where they have been called the Abitibi volcanics by M. E. Wilson. Regarding the structure and thickness of these Abitibi volcanics Wilson states: [1]

The volcanic rocks of the Abitibi group possess few features from which their structural position can be worked out, but where the lava flows are steeply

[1] Memoir 39, Geol. Sur. Can., p. 58.

inclined their trend can be recognized by their change in texture when crossed in a direction at right angles to their strike. Thus, on the portage from Lake Defresnoy to Sills lake, a hill occurs in which two flows, having an approximate thickness of 600 and 700 feet respectively, and striking N. 55° west, can be recognized. In some places the amygdaloidal structure, flow structure, or ellipsoidal structure is limited to narrow zones, and thus furnishes a clue as to the trend of the rocks. The flattening of the ellipsoids of the pillow lavas on their underside due to gravity can also—as has already been explained—be used to ascertain not only the attitude but the upper and lower sides of the flows. The structural attitude of the volcanics where they are associated with slate and phyllites can, at these points, be ascertained from the strike and dip of the sediments. From the application of the above criteria it was found that throughout a large part of the region—if not throughout its entire extent—the rocks of the Abitibi group have been highly folded and have a strike varying from northwest-southeast to southwest-northeast.

In the third Report on the Porcupine Gold Area the following remarks have been made regarding lava flows in the Keewatin.[1]

Where the pillow lavas are exposed they usually occur in a general northeast and southwest direction, and roughly interbanded with them are other lavas which do not show the pillow structure. The lava with the non-pillow structure is usually of coarser grain than the other, and has a gritty texture on the surface. Frequently there is a well-marked line between these structures, and at other places the pillow structure seems to grade into the non-pillow structure. There is, however, a suggestion of a series of volcanic flows in the Porcupine area which largely make up the Keewatin. Some of the rocks which show the large "eyes" of quartz in hand specimens may represent rocks which are more acid than the basalts. Such a rock as this can be seen on the Krist claim about 800 feet south of the Porcupine Crown south boundary. The rock is greatly altered, but some of the feldspars can be distinguished as belonging to the more acid plagioclase. The rock may be a dacitic type of the flows.

Keewatin Lava Flows in Holloway Township

In the southwest part of Holloway township, about 10 miles south of the shore of Upper Lake Abitibi, there is a remarkable series of lava flows, presumably of Keewatin age. The flows have been tilted up into almost vertical positions, and now dip at an angle of about 80 degrees to the south. Their upturned edges strike approximately east and west—a few degrees south of west astronomic. The time at our disposal was not sufficient to work out the length of the flows, but it was found that one of them extends for at least five miles in an east and west direction. The older flows occur at the north; in other words, younger flows are successively met with towards the south.

The lava flows indicate the great volcanic activity which existed in this part of the earth's crust in ancient times. Even our hurried work showed the presence of 14 distinct flows having a combined thickness of about 4,400 feet. In this thickness of 4,400 feet there may be more than 14 flows, but owing to lack of time, and to the soil which covers the rocks in many places, we did not recognize more than 14. Unquestionably the total thickness of the lava flows must be enormous, since similar volcanic rocks extend for 10 miles to the north as far as the shores of Upper Lake Abitibi, and are reported by prospectors to occur for miles to the south.

[1] The Porcupine Gold Area, Third Report, Ont. Bur. Mines, Vol. 24, Part III, p. 7.

The Keewatin series in the Lake Superior region is considered by Van Hise and Leith to constitute the greatest outpouring of lava on the crust of the earth. The discovery of the flows in Holloway township would tend to confirm this belief.

The volcanic rocks in Holloway township are indisputably stamped with the characteristics distinctive of lava flows. The most striking of these characteristics is the ropy, slaggy and at times half glassy nature of the surface of most of the flows, Fig. 8. Sometimes the surface presents a fragmental appearance. This seems to be due to the fact that the upper part of the flows was the first to solidify into a more or less thin crust, and that this solidified crust then broke up, and allowed the liquid rock from below to well up and cement the broken fragments. No doubt this process may have been repeated over and over again. Other characteristics, which we found for the most part abundantly developed, are the amygdaloidal,

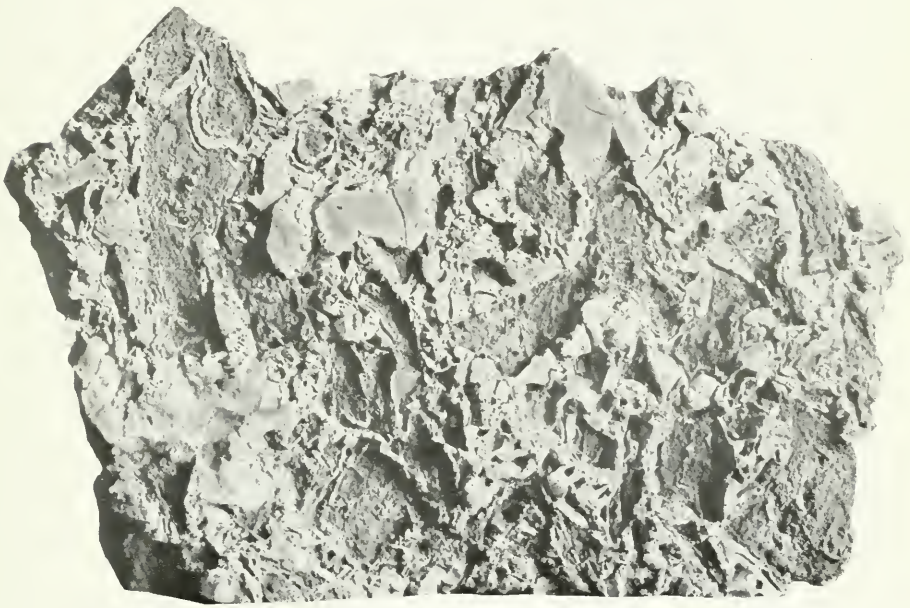

Fig. 8—Ropy surface of basalt lava flow, Lightning river area, Holloway township, at Howey-Cochenour-Willans gold prospect. Four-fifths natural size.

vesicular, scoriaceous, spherulitic, and flow textures. Of common occurrence also are the pillow structures, which are developed in the basalts, but not in the rhyolites.

In order to prove beyond question that we were dealing with a series of lava flows and not a number of parallel dikes, we made a special search for the actual surfaces of the flows. In nearly all of the fourteen flows we found these surfaces. The bottoms were also generally found. It was seen that the dense, fine-grained bottoms were chilled and frozen against the ropy and slaggy surfaces of older flows. If further proof were needed, to show that we were dealing with lava flows, it is found in the study of each individual flow. For instance, the lower parts of the basaltic flows are generally dense, fine-grained, sometimes amygdaloidal rocks; as the centres of the flows are approached the rock becomes

coarser in grain, even as coarse as a medium-grained diabase. This coarse texture, as is well known, is due to the fact that the lava cooled more slowly in the centre. As the surface is approached the flow becomes finer in grain, amygdules begin to make their appearance, and finally the rock assumes the ropy, slaggy and scoriaceous features which are characteristic of the surface of many lava flows.

The thickness of the ropy surface varies in the different lavas; in the flow in front of the office of the Howey-Cochenour-Willans gold prospect the ropy surface makes up almost half the flow, the total thickness of the flow itself being about 27 feet. In other instances these ropy surfaces attain a thickness of as much as 40 feet, in which cases the flows themselves are hundreds of feet thick. Sometimes the ropy surface is only a few feet thick.

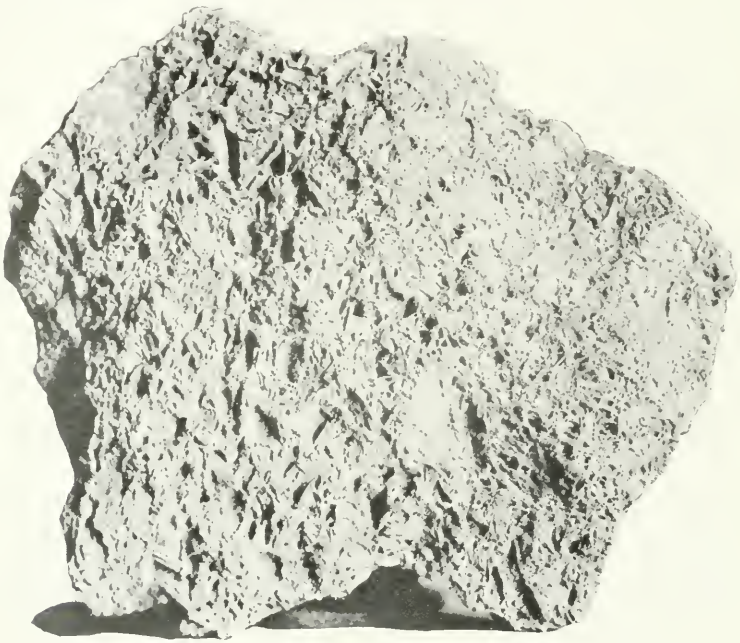

Fig. 9—Surface of basalt lava flow, Lightning river area, Holloway township, at Howey-Cochenour-Willans gold prospect. Five-sixths natural size.

The volcanic rocks briefly described above are in an unusual state of preservation in so far as their textures and structures are concerned. The ropy, slaggy, scoriaceous, amygdaloidal and other characteristics are all easily recognizable. This is due to the fact that the rocks, although they have been tilted into almost vertical positions, have not been subjected to those severe processes of metamorphism which alter them to schists. They, as a consequence, retain their massive characters.

We made a rough attempt to map these flows in Holloway township, but the time at our disposal was too limited to do much. Moreover, none of the mining claims were surveyed. However, we publish with this report, facing page 14, a sketch map which shows the flows, mainly along one section line. Whether the flows really belong to the Keewatin, or are a younger series of rocks, cannot be

dogmatically stated. Until it is proved that they do belong to a younger series, we prefer, in the meantime, to class the flows as Keewatin.

Holloway Lava Flows in Detail

Our examination of the flows was confined largely to a section north and south along the trail which runs northward from the Abnageezy river, past the Howey-Cochenour-Willans gold prospect, in the southwest part of Holloway township. The following description along this section begins with the younger flows at the south and successively deals with older and older flows towards the north.

We have divided the flows into two classes, first, a basic, green variety which we call basalt, and, second, an acid, pink variety which we call rhyolite. It is likely, however, that other types of rock will be recognized among these ancient flows when they are examined in more detail. Probably andesites, dacites, quartz-

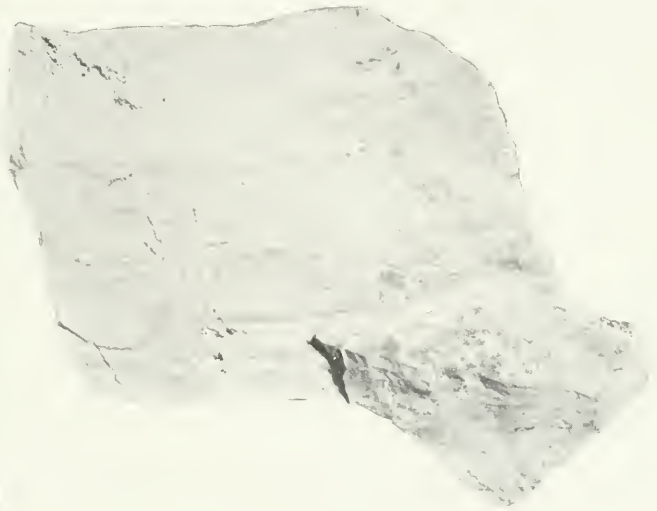

Fig. 10—Flow texture in rhyolite at Howey-Cochenour-Willans gold prospect, Lightning river area, Holloway township. Three-quarters natural size.

porphyries and other rocks all occur. For practical purposes the subdivision into basalt and rhyolite is sufficient.

The first lava at the south end of our section is a basalt. We did not see the top or bottom of this flow, and its thickness was not ascertained. The next flow to the north is a pink rhyolite, about 250 feet wide; it is at times amygdaloidal, and shows under the microscope a holocrystalline texture, consisting of grains of quartz and feldspar, some of the latter being banded. The next flow to the north has a thickness of 650 feet, and the next has a thickness of 1,400 feet; the latter near the base has a well preserved pillow structure. Both flows are basalts. It seems unlikely that these two last mentioned flows are as thick as our cross-section shows; that is to say, detailed work might demonstrate that more than two flows occur in this distance.

The next flow to the north is also a basalt. It is just south of the office of the Howey-Cochenour-Willans prospect, and has a thickness of 27 feet, about 12

feet of which is made up of ropy, slaggy top. The contact between the ropy surface of this flow and the bottom of the flow immediately to the south is well exposed. The next flow to the north has an apparent thickness of 560 feet; it may include more than one flow, there being some swamp at the north side of the flow. The ropy surface of this flow has a bluish grey colour and retains in places very much the appearance of slag. A dike of diabase porphyry cuts the bottom of the flow, as shown on the map and cross-section facing this page.

The next flow to the north has a thickness of some 60 feet, and consists of basalt. It is followed by a very striking light-coloured rhyolite, which has a pale pink or mauve colour. It has a width of about 200 feet and has been traced in an east and west direction for about 5 miles. It may be longer than this. Amygdaloidal facies are abundantly developed in it, and well defined flow lines (Fig. 10) are not uncommon. Under the microscope no glass was observed in a thin section: the rock appeared to be holocrystalline and to consist mainly of quartz and feldspar grains. Possibly the flow solidified in part as a glass and was later on devitrified. The rock contains tiny cracks in which specular iron ore is commonly found.

A chemical analysis of the rhyolite was made by W. K. McNeill and T. E. Rothwell, Provincial Assay Office, with the following results:

	Per cent.
Silica	80.12
Alumina	9.34
Ferric oxide	2.77
Ferrous oxide	1.00
Lime	0.73
Magnesia	0.23
Soda	4.82
Potash	Trace
Carbon dioxide	0.60
Water	0.18
	99.79

The next flow to the north is a basalt about 95 feet thick. It is in this flow that the Howey-Cochenour-Willans gold vein outcrops on the surface, although the east end of the vein passes into the rhyolite. The central part of this basalt flow is one of the freshest Keewatin lavas which the staff of the Bureau of Mines has examined. It consists mainly of plagioclase and augite showing ophitic textures, Fig. 11. The usual decomposition products, such as chlorite, are present; nevertheless the plagioclase shows more or less clear banding, and the augite is fairly fresh. The actual contact facies at the bottom of the flow—that part which is frozen against the slaggy top of the next flow to the north—is dense and fine grained. The lower 25 feet are also dense and fine grained and contain a few amygdules. Generally speaking, this flow, where it is exposed in the vicinity of the gold vein, lacks the ropy, slaggy surface although the top is quite amygdaloidal. About 200 feet east of the shaft the flow has pillow structure characteristically developed. These pillows begin almost at the very bottom of the flow—two feet from the bottom, to be exact. They continue to within two or three feet of the top in this particular cross-section of the flow.

A
A'
HOWEY-COCHENDUR-WILLANS
GOLD PROSPECT
Shaft
Boiler House
(L.7315)
Office
Road to Waterloo
Trail to Montcalm River
Trail
B
B'
PROVINCE OF ONTARIO
Map No 28a
PLAN AND CROSS SECTION
SHOWING
LAVA FLOWS AND GOLD VEIN IN HOLLOWAY TOWNSHIP
South of Upper Lake Abitibi District of Timiskaming
ONTARIO
Scale - 10 chains or 660 feet 1 inch
LEGEND
PRE-CAMBRIAN

The next flow to the north is about 115 feet wide and is a basalt. It has a ropy, fragmental looking surface from 20 to 35 feet thick, in which are developed, here and there, curious incipient pillow structures. The top is essentially fragmental in character, being made up of angular, stony, almost glassy fragments of lava from fractions of an inch to as much as four or five inches. The flow, in those parts of it which were examined, lacks typical pillow structures, save the incipient forms just alluded to. The centre of the flow is a massive, medium-grained rock with an ophitic texture. Under the microscope this central part is seen to be unusually fresh, and to contain, in addition to plagioclase and augite, some primary quartz. At a point about 10 feet from the bottom of the flow amygdules are thickly developed, and are associated with some greenish grey fragmental material which has small incipient pillow structures. Possibly this

Fig. 11—Interior of basic lava flow at Howey-Cochenour-Willans gold prospect, Holloway township. Magnified about 20 diameters. One nicol. The long rods are plagioclase, the remaining parts being mostly augite and magnetite.

fragmental looking facies marks the presence of another flow, but we were doubtful as to its interpretation. Thin sections of the slaggy top of the flow show, even with high powers of the microscope, a very fine grained base in which are set tiny rods of what may be feldspar. Another section of the slaggy top lacks these rods and consists of a fine grained base, showing perlitic texture, Fig. 12, in which it is difficult to distinguish the individual minerals.

This flow is followed to the north by another lava of basaltic composition, having a thickness of some 620 feet. The ropy top has a thickness of 40 feet in some places. Thin sections from the central parts of the flow show the rock to be medium to fine in grain and to have ophitic textures.

Immediately north of this is another basaltic flow 330 feet thick.

This is followed by a flow about 55 feet thick which on weathered surfaces has in places a pink colour, and elsewhere a grey or brown colour. Freshly fractured faces have a dark green to grey colour. Phenocrysts of quartz and feldspar are common and are large enough to be recognized with the naked eye. The rock is quite amygdaloidal and shows flow textures. It appears to vary somewhat in composition from point to point, and may change from a dacite to a rhyolite. This flow occupies a slight depression.

To the north of this lava there is a basaltic flow of great, although unknown, thickness in which pillow structures are well developed.

Beyond this to the north for 10 miles, as far north as Upper Lake Abitibi, similar lavas are found, but we made no attempt to work out individual flows, except on the shores of Upper Lake Abitibi, where we recognized the ropy surface of a thick flow, on which rests directly a pillow lava. These two flows are described in the following paragraphs.

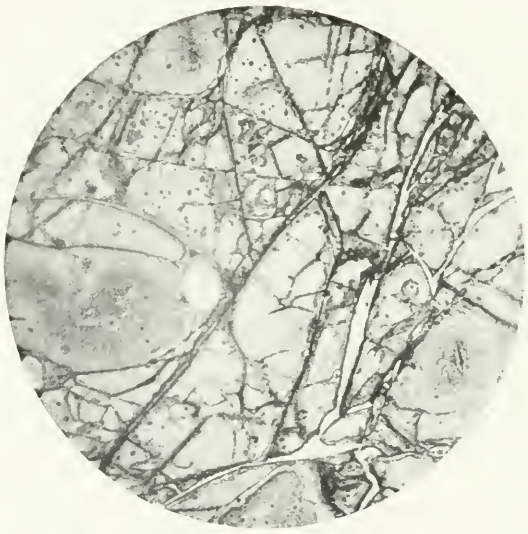

Fig. 12—Perlitic texture in surface of basalt lava flow, Howey-Cochenour-Willans gold prospect, Lightning river area, Holloway township. Magnified about 20 diameters. One nicol.

Keewatin Lava Flows on Upper Lake Abitibi

On the south shore of Upper Lake Abitibi, at the northwest corner of Stoughton township, there are exposed two green coloured, basaltic, pillow lava flows on a point known as No. 103a. This point is shown, with the number, on the map accompanying our report. The thickness of the flows was not worked out, since we saw only the upper part of one flow and the lower part of the other, Fig. 13. The contact between the flows is, however, exposed and appears to strike in a northeasterly direction, while the dip is about 50° to the northwest. The older lava occurs at the southeast. The lower part of the older lava, where exposed, shows pillow structure. As the upper part is approached the rock, somewhat abruptly, assumes the ropy, slaggy appearance characteristic of the surface of lavas. The transition between that part of the flow containing pillow structures, on the one

hand, and between the ropy facies, on the other hand, takes place in about 18 inches. The thickness of the ropy surface is great—about 200 feet or more. Much of the ropy top has a fragmental appearance, Fig. 14, some of the fragments of which are amygdaloidal. None of the ropy, fragmental looking top shows bedding. It is difficult to say, however, whether or not there is any true volcanic ejectaments (tuff or breccia) mixed in with the ropy surface.

Resting directly on this ropy surface is the younger pillow lava. The pillows in the younger flow are developed to the very bottom of the lava. Higher up in this younger flow the pillows disappear, and the rock becomes coarser in grain. The top of the flow was not observed.

At the contact between the flows the rock is schistose for three or four inches, the schistosity possibly being due to a slight fault between the flows.

In the case of these two flows the younger lava is at the northwest, while the older one is at the southeast. Ten miles south of here, however, in Holloway township, the order is reversed, and the younger lavas occur at the south. This structure is suggestive of an anticlinal fold, one arm of which lies towards the north and the other towards the south.

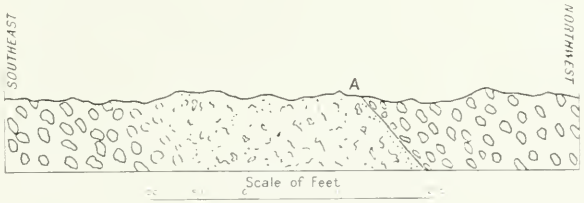

Fig. 13—Pillow lava flow at right hand side of drawing, resting on the ropy surface of an older pillow lava flow; the contact between the two flows is shown at the point A. South shore of Upper Lake Abitibi, at the northwest corner of Stoughton township.

Lava Flows in other parts of the World

It may not be out of place here to add a few paragraphs briefly describing important outpourings of lava in other parts of the world, ranging in age from pre-Cambrian to historic times.

The flows of the Keweenawan series, of pre-Cambrian age, in the lake Superior region vary from about two feet to those which are 100 feet or more in thickness. In only two instances do they reach a thickness of 500 feet. The thin flows are not of great length, nor, for the most part, are the thicker flows. The greatest distance which a single flow has been followed is 30 miles. In some parts these Keweenawan flows in the lake Superior region have a total thickness of 23,000 feet.[1]

While the flows on Keweenaw Point are of stupendous thickness they are rivalled, nevertheless, in areal extent by the great outpouring of lavas in India known as the Deccan Trap. The Deccan Trap consists of many flows and covers a region of 200,000 square miles: in the vicinity of Bombay the flows have a total thickness of 6,000 feet. The lavas in India are younger than the Keweenawan flows, the former belonging to the Cretaceous period.

In the northwestern United States there is a remarkably similar, though younger, series of basaltic lava flows having about the same stupendous areal extent

[1] U. S. G. S. Monograph 52, 1911, pp. 386, 408, 409.

as the Deccan Trap in India. These flows are known as the Columbia lava and cover a region of between 200,000 and 250,000 square miles. When one reflects that this is a greater region than France and Great Britain combined, some appreciation of the gigantic nature of these volcanic outbursts may be realized. The Columbia lava is widespread throughout Idaho, Oregon, Washington and Northern California. It is composed of many sheets, some of which are separated by sediments of Tertiary age, and has a maximum thickness of 4,000 feet. One of the flows, varying in thickness from 40 to 100 feet, has been traced for 75 to 100 miles. In parts of this immense expanse of lavas the surface is covered with rich soil, the result of the decomposition of the basalt. The wheat lands of Oregon and Washington are nourished in this kindly earth and, in the words of Russell: "In the autumn the boundless plateau is a golden sea of waving grain." [1]

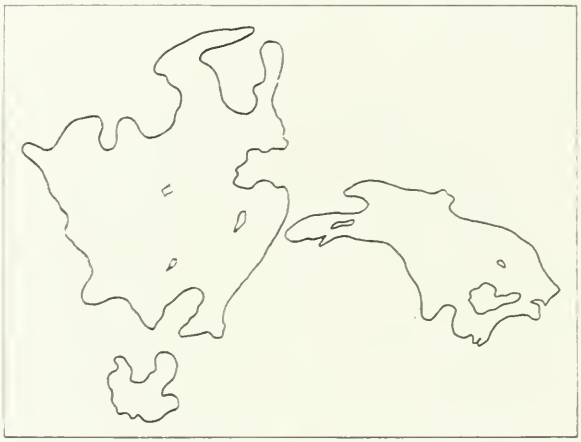

Fig. 14—Ropy fragments in surface of pillow lava flow on the south shore of Upper Lake Abitibi, at the northwest corner of Stoughton township. The largest fragment in drawing is eight inches long.

There are also great lava flows of Tertiary age in the northeast part of Ireland, of which the well known Giant's Causeway constitutes a part. The bed that forms the Giant's Causeway is about 70 feet thick. The flows in Ireland are thought by Geikie to be a remnant of vast outpourings which at one time covered a stretch of country from the Orkney Islands southwards into Yorkshire and across Britain from sea to sea over a region of not less than 40,000 square miles.[2]

The volcanic eruptions on Keweenaw Point of the Lake Superior region, the Columbia lava in the northwestern part of the United States, the Deccan Trap in India, and the flows in Ireland, all occurred in prehistoric times. Coming now to historic times, it is well known that the greatest outpouring of lava on record occurred in 1783 in Iceland. This eruption issued from a fissure 20 miles long "and poured forth in two vast floods, of which the western branch flowed for upwards of 40 miles and the other 28 miles." [3]

[1] Volcanoes of North America, I. C. Russell.
[2] Text Book of Geology, Geikie, Vol. I, p. 346.
[3] Text Book of Geology, Geikie, Vol. I, p. 342.

It is believed by geologists that all of the lava flows referred to above have issued from great fissures in the earth's crust, rather than from volcanoes. Indeed, it is now generally accepted as the truth that fissure eruptions played a more important part in the history of lava flows than did volcanoes. The absence of volcanic necks in the regions referred to supplies a basis for this theory.

Keewatin Rocks in Marriott, Harker, Frecheville and Lamplugh Townships

A volcanic rock along the southwest shore of McDiarmid lake in Marriott township is light green in colour. It is amygdaloidal, and contains considerable carbonate. The greenish colour is due to chlorite that occurs in distinct small

Fig. 15—Columbia lava, showing columnar jointing, in the State of Washington, U.S.A.

rounded areas as an alteration from a ferro-magnesian mineral. Two feldspars are recognized, the larger lath-like crystals that are probably andesite and the smaller rod-like crystals of a more acid plagioclase; the rock may be a bleached andesite.

In the northeast part of Harker township to the south of the Ghost range there is a rock light to dark grey in colour and somewhat schistose that in the field resembles an agglomerate. On examination, however, it proves to be an igneous rock through which are scattered fragments of porphyry. The main rock is of a porphyritic character also, consequently it would seem that the frag-

ments have resulted from an early crystallization from the same magma. The phenocrysts of the main mass and of the fragments are acidic plagioclase. A flow structure is recognized in the small feldspars of the groundmass of some of the fragments: the rock may be called a porphyrite.

In Frecheville township, to the northeast of the Ghost range, just below the forks of the Lightning river, there is a light-coloured schist. As the diabasic rock of the Ghost range is quite massive, it is evident that these schists on either side are considerably older than the diabase and are probably of Keewatin age.

In Lamplugh township, a sample of fine-grained greenstone from a high ridge on the south shore of Upper Abitibi lake, one mile west of Lightning river, which is typical of most of the fine-grained basic lava along the lake, has a basaltic texture under the microscope. Fine rods of plagioclase having a flow structure are set in a matrix of secondary minerals, largely green fibrous hornblende and zoisite. This rock frequently shows an ellipsoidal structure in the field.

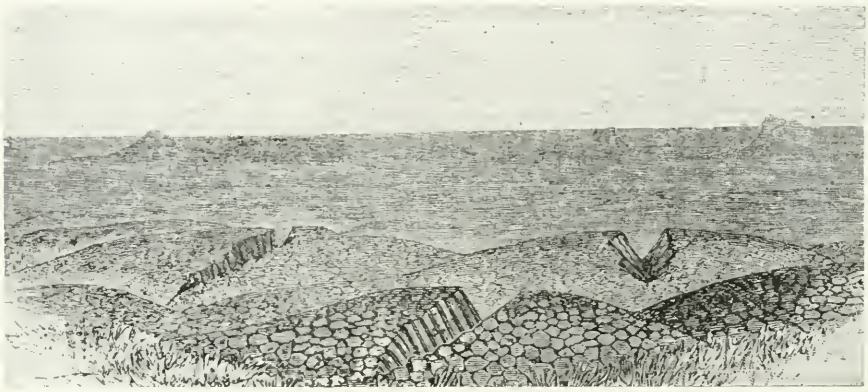

Fig. 16—View of the great basalt plain of the Snake river, Idaho, U.S.A. (Geikie's Text-Book of Geology, second edition.)

Keewatin Rocks in Beatty, Calvert, Knox, Wilkie and Clergue Townships

The rocks in the western half of the area which were mapped in 1918 consist dominantly of volcanic rocks, including ellipsoidal basalt, light-coloured rhyolite, andesite, diabase and dacite (?), many of which have been completely altered to hornblende, chlorite, carbonate and other schists. The extrusives are separated at intervals by bands of iron-formation, volcanic fragmental material and water-sorted sediments. All the above rocks are intruded at times by diabasic rocks of the plutonic type which are probably post-Keewatin in age. A more detailed description of certain types follows.

The extrusives probably represent successive flows which have been tilted into almost vertical positions. These rocks are usually so much altered that it has not been possible to recognize the original tops and bottoms of the flows, or to map them as has been done in Holloway township. Many of the basalt and andesite flows have the usual ellipsoidal and amygdaloidal structures, while some of the intervening flows may be described as massive, coarse-grained, altered diabase and dacite (?) which have no pillow structure. A typical ellipsoidal basalt

from the north half of lot 2 in the second concession of Beatty township was analyzed by W. K. McNeill. Provincial Assayer, who reported the following:—

	Per cent.
Silica	51.80
Alumina	17.25
Ferrous oxide	9.66
Ferric oxide	3.11
Lime	4.01
Magnesia	2.68
Soda	3.88
Potash	0.58
Carbon dioxide	3.08
Water	4.16
Total	100.21

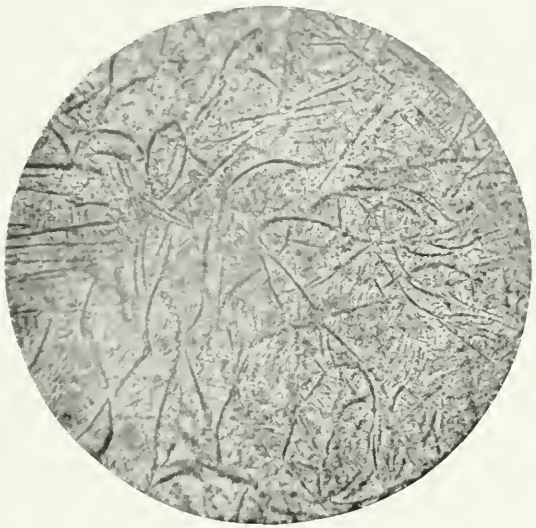

Fig. 17—Crystallites in spherulitic lava. One mile post, west boundary, Marriott township. Magnified about 40 diameters. One nicol.

A thin section of the same rock showed a number of small rods of anorthite partly replaced by sericite and a few small grains of quartz in a groundmass of hornblende, largely decomposed to chlorite, with some calcite, sericite, kaolin, epidote, pyrite and magnetite. In many of the thin sections examined all of the minerals, including the feldspars, are secondary.

Small veins of prehnite a few inches in width occur in the pillow lava near the diabase in the northwest corner of lot 9 in the fifth concession of Calvert township. A sample analyzed by W. K. McNeill gave the following results:—

	Per cent.
Silica	40.36
Alumina	26.02
Ferric oxide	3.41
Ferrous oxide	0.39
Lime	23.08
Magnesia	0.14
Soda	0.99
Potash	None
Carbon dioxide	0.79
Water	4.52
Total	99.70

In the southwest part of Knox township alternating flows of pillow lava and massive, fairly fresh greenstone with ophitic texture may be seen.

At the Alexo mine both andesitic and rhyolitic types are found, one passing into the other. A light grey rhyolitic rock showing quartz phenocrysts and a few amygdules appears to be interbanded with pillow lava and chert and cut by quartz-diabase on lot 4 in the first concession of Wilkie township. Under the microscope the diabase is seen to consist largely of quartz with some feldspar, chlorite, calcite and sericite. The carbonate schist in which the Quinn gold-bearing quartz vein occurs was apparently a rhyolite flow originally. The microscope shows the rock to contain many phenocrysts of quartz and intergrowths of quartz and feldspar set in carbonate with chlorite, iron oxide, etc. A porphyry or rhyolite mass, 10 feet in width and showing crushed or flow markings, occurs associated with the dacite (?) at Twin falls. Somewhat similar rhyolite may be seen on lot 2 in the fourth concession of Clergue township.

Keewatin Schists

The rocks in the area covered by the map are on the whole massive, and are not altered to schist. There are, however, some notable exceptions. For instance, on Lightning Point the Keewatin lavas are altered to schist, this alteration quite evidently being due to the great intrusion of granite which is exposed on the north shore of Lake Abitibi. Schistose structures are found in some of the rocks in the westerly part of the Indian Reserve near the boundary line of McCool township. On lot 3 in the fifth concession of Calvert township, and on lot 9 in the sixth concession of the same township, the pillow lavas have been metamorphosed to hornblende schist, probably due to their proximity to granite. The rocks on the Raty claim in central Rickard township are a little schistose and impregnated with carbonate. Along the Shallow river, on lots 10 and 11 in the second concession of Wilkie township, there are quartz-porphyries of Keewatin, or later age, which are rusty and quite schistose. Green schists form the periphery of a porphyry mass over one-quarter of a mile in width in lot 12 in the second concession of Warden township.

The rhyolite containing the Quinn gold-bearing quartz vein has been altered to a carbonate schist. Hornblende schist is most prevalent in south Bowman township. It is cut by tongues of granite which are probably offshoots from a large granite mass to the south. An andalusite schist, showing crystals of chiastolite set in a groundmass of radiating sillimanite and other minerals, was recognized on lot 5 in the fifth concession of Beatty township. M. B. Baker refers to a quartz-mica-staurolite schist striking nearly east and west on the Low Bush river in lot 7, concession V, Bowyer township.

The tuffs, slate and greywacké are usually schistose.

Chert, Slate, Greywacké, Quartzite, Conglomerate, Tuff, Agglomerate and Iron Formation

In our map sheet there is an interesting series comprised of highly altered sediments which are closely associated with the Keewatin. Three large areas of such rocks have been mapped. One belt has an apparent thickness of one and one-half miles and a length of 11 miles, extending from the northwest part of Guibord

township to lot 2 in the sixth concession of Carr township. Other belts not so extensive, extend across lots 5, 6 and 7, in the second concession of Coulson township, and along the shore of Abitibi lake in Steele township. Some smaller areas have also been mapped.

The rocks in the three large areas mentioned in the preceding paragraph consist of slate, greywacké, quartzite and a little conglomerate, all of which have been altered to schists. Both the cleavage and bedding of the sediments have nearly vertical dips, but there are usually small angles between their strikes. A little

Fig. 18—Bomb-like inclusion in tuff, lot 8, concession 1, Mann township.

chert is also present. Conglomerate schist was seen in four localities and, in each case, near the outer edge of the sediments, viz.: on the Detroit New Ontario property, Munro township; on lot 1 in the second concession of Beatty township, on lots 6 and 7, second concession, Coulson township, and on the shore of Lower Abitibi lake in lot 6, concession E, Steele township. The pebbles, which are somewhat flattened, consist of quartz-porphyry and greenstones, suggesting an unconformity between the sediments, on the one hand, and the greenstones and quartz-porphyry, on the other. However, the only good contacts which were seen between the sediments and the greenstones were on lot 7 in the second concession of Coulson township, and these might suggest that the sediments were interbedded with the pillow lavas of the Keewatin. It may be added that in

this locality the banded cherts, which appear to be a part of the main group of sediments, are older than pillow lavas. In view of these apparently conflicting observations, it is seen that the relationship between the Keewatin lavas and these old sedimentary rocks has not been definitely worked out. Possibly the conglomerates may be of interformational origin or may belong to the Timiskaming series.

A porphyry dike, three feet wide, cuts across the greywacké schist on the Detroit New Ontario property. Many diabase dikes intrude the sedimentary series in various localities, as shown on the map.

Some gold has been produced at the Gold Pyramid and Detroit New Ontario properties which occur in these sedimentary rocks.

Other areas of these sediments, and also of iron formation, are described in following paragraphs.

Fig. 19—Point at mouth of Ghost river, Upper Lake Abitibi.

A white weathering, tufaceous, rusty schist occurs on the Abitibi river on lots 7 and 8 of the fifth concession of Rickard township. The schist strikes 10° south of east and dips 70° to the north; it is intruded by a narrow dike of quartz-diabase. At Little Couchiching falls, in Knox township, is a group of interbedded rocks, now schists, comprising pillow lava, ash rocks, cherty iron-formation and a rusty schist with coarse white quartz grains, the last being a tuff or quartz-porphyry schist. Narrow bands of cherty iron-formation were observed with the pillow lava on the Raty claim, Rickard township. On lot 1 in the fifth concession of Teefy a shallow pit has been sunk on a banded chert striking northeast and southwest and dipping 70° to the northwest. The chert associated with the rhyolite and pillow lava on lot 4 in the first concession of Wilkie township consists almost entirely of fine-grained quartz. A tufaceous schist from lot 1A in the second concession of Coulson township consists microscopically of angular fragments of

feldspar, quartz and foreign rock fragments in a groundmass of feldspar, quartz, calcite, chlorite, etc. Certain veins from these rocks have yielded low values in gold. A narrow band of slates, standing vertically and striking northeast, occurs with amygdaloidal lava on lot 5 in the fourth concession of Warden township.

M. B. Baker[1] refers to jasper-magnetite bands occurring with dolomite on island No. 14 and on the mainland immediately north of that on Lower Abitibi lake. Much iron-formation also occurs on the east shore of the northeast bay of Lower Abitibi lake.

Along the south shore of Upper Abitibi lake, from the Ghost river to the Mattawasagi (Teddy Bear) river, there are numerous exposures of basic igneous rock, largely pillow lavas and related diabasic rock, that are cut by numerous narrow dikes of feldspar porphyry. From the Ghost river to the Lightning river there are a number of narrow bands of iron-formation that are interbanded with the lavas. Just east of Point 144 A. is a band of finely banded fragmental material, four feet in width, and another band two feet wide of chert-like iron-formation. At Point 143 A. the iron-formation is 100 feet in width, consisting of interbanded greywacké-like layers of coarse and fine material, chert-like bands four to six inches wide, and black bands of magnetite and silica a few inches wide. The whole formation dips steeply to the north between bands of greenstone. The northerly band of greenstone is cut by a 20-foot dike of feldspar-porphyry. Just west of Point 142 A. the iron-formation is 50 feet wide, largely of grey chert and greywacké, but it contains one striking layer a foot in width, of bright red jaspilyte containing jasper and hematite. East of Point 137 A. there is a band of similar material 100 feet in width. There is considerable variation in the strike of these bands of iron-formation, from nearly east and west to nearly north and south. Since the rock exposures in this locality are confined to the shore, with stratified clay above the rock exposures inland, it is impossible to say whether all these exposures belong to separate bands, or whether some of them may be outcrops of the same band. Rocks resembling volcanic ash and having an east-west strike occur along the shore on the east side of Lightning point.

In the southeast part of McCool township and the southwest part of the Indian Reserve altered volcanic and related rocks are well exposed. Many of these rocks are now partly schistose with a general strike of N. 60° W. and show bleached or rusty weathered surfaces. Both the ellipsoidal and amygdaloidal structures are observed in the volcanics. These are accompanied by breccia, agglomerate, rocks largely altered to carbonate, cherts and diabase. An interesting rock occurs about 60 chains east of the one-mile post between McCool and the Indian Reserve. It is hard, light-greenish, silicious rock containing pea-like inclusions that resemble amygdules, Fig. 20. Under the microscope the rock is largely fine-grained silica scattered through which are grains of ferruginous carbonate, some in rhombic forms and also rounded patches of the same material. There is also a small amount of secondary mica present. On weathering the inclusions of carbonate become altered to iron oxide, beginning with a thin film on the periphery. The scattered grains are also altered on the surface to iron oxide. This rock is a member of the Keewatin iron-formation.

[1] Ont. Bur. of Mines Report, 1909, Vol. 18, Pt. I, p. 276.

The following is a chemical analysis of the chert: Silica, 72.78 per cent., alumina, 7.61, ferrous oxide, 4.91, ferric oxide, 1.04, lime, 4.20, magnesia, 0.72, soda, 1.00, potash, trace, carbon dioxide, 6.98, water, 1.13 per cent.

To the south of the chert there is a rock greatly altered to carbonate which shows traces of a former igneous texture.

Twenty chains south of the one-mile post there is a hard flint-like rock of a dark grey colour which bleaches to a light grey on the surface. Under the microscope it is very fine-grained, but irregular grains of quartz and feldspar are recognizable, suggesting a fragmental origin. This rock may be a very fine-grained tuff. It is intruded by numerous diabase dikes in a complex manner. To the south there is a vertical contact with a conglomeratic rock with the strike N. 60° W.

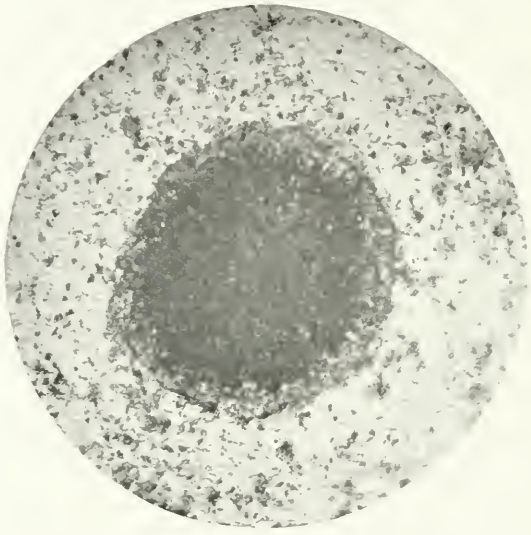

Fig. 20—Concretionary ferruginous carbonate (dark area) in chert, 60 chains east of one mile post, east boundary of McCool township. Magnified about 20 diameters. One nicol.

The latter contains many inclusions of other rocks, among them amygdaloidal lava and rusty weathering fragments; also some fragments very like the fine-grained hard rock previously mentioned. There is a little banded arrangement of coarse and fine material near the contact where the fragments are usually four to six inches in diameter. One inclusion of amygdaloidal lava is, however, eight feet in diameter. Farther away the inclusions are small, being only one to two inches. It is likely this material is volcanic fragmental, and is part of the series of lavas and other rocks just described.

The series is intruded by several narrow dikes of feldspar-porphyry with phenocrysts up to one-half an inch.

In Boundary bay on Upper Lake Abitibi there are beds, Fig. 21, which appear to be agglomerate and tuff, having an exposed thickness of about 60 feet. Some of the beds contain considerable quantities of ankerite. A brief description, beginning with the highest exposed member, is given below:—

	Thickness in feet.
(1) Agglomerate, containing fragments up to one foot in diameter, passing downward into finer tufaceous material	30
(2) Well bedded slaty material (tuff?)	4
(3) Greenish-coloured bed, lacking bedding and intersected by veinlets of ankerite one inch wide	13
(4) Rusty brown tuff (?), impregnated with ankerite and also intersected by ankerite veinlets	22
(5) Iron formation consisting of 1 to 4 inches of red jasper and grey chert	0-4 inches
(6) Similar to bed No. 4	5
	74 ft. 4 in.

The measurements given are taken along the surface. Inasmuch, however, as the beds dip at an angle of 60 degrees to the northeast, the actual thickness of the series, allowing for the dip, is about 60 feet. The agglomerate bed, No. 1, contains fragments of chert and jasper, and of fine-grained felsitic material.

The relation of these tuffs and breccias to pillow lavas, which are exposed nearby, was not seen.

A prominent band of iron formation occurs at the northeast part of Garrison township over a mile south of the north boundary. Other outcrops of iron forma-

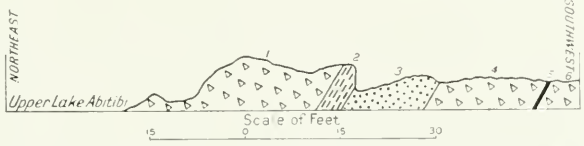

Fig. 21—Beds of agglomerate and tuff associated with Keewatin pillow lavas, in Boundary Bay, Upper Lake Abitibi.

tion, already mentioned, occur on the south shore of Upper Lake Abitibi and elsewhere. These deposits of low-grade iron ore, which occur abundantly throughout the pre-Cambrian rocks of northern Ontario, constitute immense reserves, but at the present time the iron smelters will not use ore of this character because it is too low in grade and cannot compete with the rich and easily mined deposits in the Lake Superior region.

It has been shown in certain areas in the Vermilion district of the Lake Superior region that some of the Keewatin iron-formation (Soudan formation) beds are interbedded with successive basalt flows. These beds of iron-formation are but a few feet thick and may be traced hundreds of yards. The tops of the flows are recognized by amygdaloidal and other surface textures.[1]

Intrusive Rocks

Cutting the Keewatin there are various basic and acid rocks the ages of which have not all been determined. These include diabase, gabbro, serpentine, pyroxenite and peridotite, probably of pre-Algoman (?) age; granite, syenite and acid porphyries of Algoman (?) age; and quartz-and olivine-diabase of Keweenawan (?) age.

[1] U. S. G. S. Monograph 52, Van Hise and Leith, pp. 123, 126.

Diabase and Gabbro

The diabase and gabbro, the oldest of these intrusives, occur as dikes and small boss-like masses. Ghost mountain is an example of a large dike or sill of this type. The rocks have a slightly older look in the field than the Keweenawan or Nipissing diabase at Cobalt, and microscopic examinations tend to confirm the field evidence. A sample from a point on the west shore of Upper Abitibi lake and one and one-half miles south of the Narrows shows the feldspar altered to kaolin and sericite and the augite to hornblende and chlorite, there being many graphic intergrowths of quartz and altered feldspars. In some of the larger outcrops the rocks may become quite coarse at times and still retain the ophitic texture, while in other places the diabase may grade into gabbro. Considerable

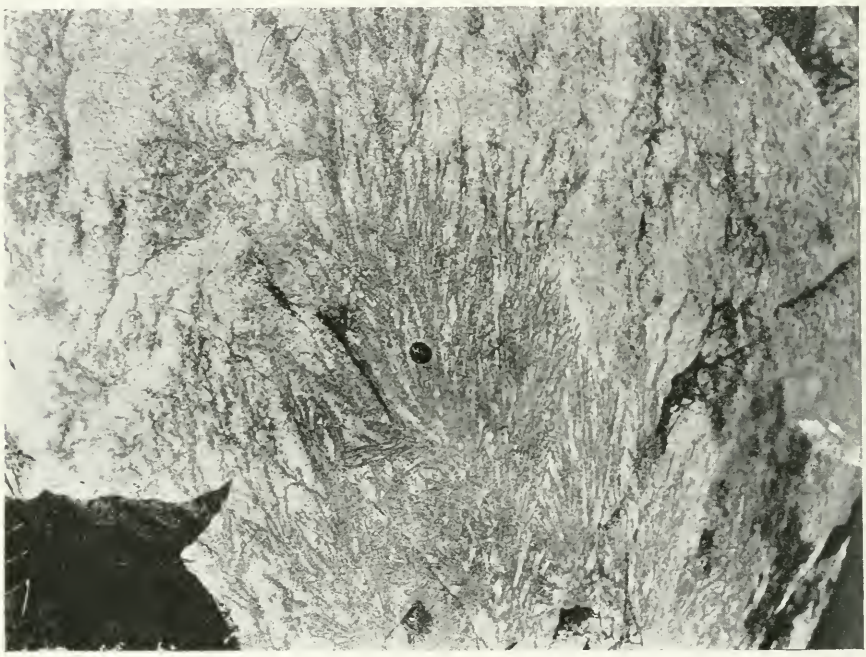

Fig. 22—Dendritic epidote in diabase, McCool township.

magnetite is usually present in the rock, an outcrop on lot 12 in the first concession of Warden township containing approximately 25 per cent. of magnetic iron.

The boss-like mass of diabase in north Munro and south Warden townships is probably the largest outcrop in the map-sheet, having an area of approximately 8 square miles. Throughout the mass are small roof pendants, or erosion remnants, of chert, iron-formation and greenstone. In addition, the diabase contains numerous rounded and angular fragments of the same rocks, viz.: chert, iron-formation, greenstone, etc., which were sinking in the magma when the diabase magma solidified. Good examples of these xenoliths, as they are called, may be seen along the north edge of the boss, particularly along the shallow river in lot 1A, in the first concession of Coulson township and in the north part of lot eleven in the first concession of Warden township.

The massive gabbro in lot 2, concession II, Bowman township, appears to be of this pre-Algoman type and younger than the Keewatin. This particular gabbro is intruded by quartz-feldspar-porphyry.

Several large areas of diabase are exposed in McCool township and in one or two small areas in Michaud. In the field these are characterized by a somewhat browner surface than the Keewatin diabase, and they lack pillow structure. In general they are coarser in grain, being rather granitoid. A striking feature that is somewhat common is a dendritic development of epidote, Fig. 22, which is possibly to be looked upon as an indication of slower cooling than is the case with most diabase. Microscopically, it appears to be a normal diabase with part of the augite altered to hornblende. There is a small quantity of quartz present as a micrographic intergrowth with the feldspar, suggesting conditions similar to those necessary for the formation of pegmatite. Aside from the presence of serpentine dikes which cut this formation, no evidence of economic minerals was observed.

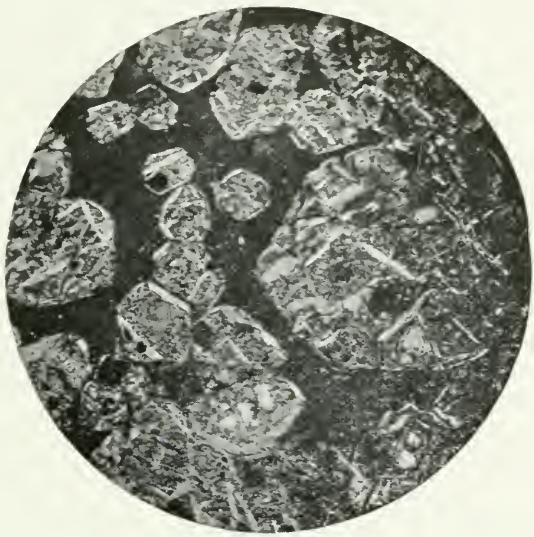

Fig. 23—Serpentine rock, at base of Ghost mountain, south side. Magnified about 20 diameters. Cross nicols.

Diabase and Serpentine of Ghost Mountain

Ghost mountain is the most prominent elevation in the area south of Upper Lake Abitibi. It rises about 660 feet above the lake, and stretches in an eastward and westward direction for five miles, with a width of about a mile. The mountain consists almost wholly of diabase or gabbro which is presumably intrusive into the Keewatin lavas. It is more altered than the Nipissing diabase at Cobalt. The rock is made up essentially of plagioclase and pyroxene, both of which are more or less altered to the usual decomposition products. Small quantities of primary quartz occur.

While the mountain consists almost wholly of diabase, or its closely related rock, gabbro, we found that there is also serpentine rock, together with pyroxenite

and peridotite, Figs. 23, 24. The position of the serpentine rock is of interest. It occurs around the base of the mountain at the north, west, and south sides, in an apparently continuous band or zone on these three sides. Unfortunately, there is much drift around the mountain, so that we were not able to prove that the serpentine completely encircles the whole base of the mountain, including the east end.

Such exposures, as we found, appear to suggest that the diabase passes downward into serpentine rock. This has not, however, been proved to our satisfaction. The occurrence at Ghost mountain, in which the serpentine is found at the bottom of the diabase mass, suggests that the olivine and pyroxene, from which the serpentine has been derived by alteration, have segregated to the bottom of the mass, if the intrusion is a sill. If the intrusion is a great dike-like mass or boss, then the olivine and pyroxene may have segregated to the outer edges. It was

Fig. 24—Serpentine rock, at base of Ghost mountain, south side. Magnified about 20 diameters. Cross nicols.

found unpracticable to work out the structure of Ghost mountain, that is to say, whether it is a great dike-like intrusion, or the remnant of a sill which at one time, prior to its erosion, was much more extensive. To accomplish this it would, of course, be necessary to find contacts between the Keewatin lava flows and the diabase or the serpentine rock. Owing to the presence of heavy drift surrounding the base of the mountain no such contacts were discovered.

If the diabase is in the form of a sill then the occurrence of olivine at the base is suggestive of geological conditions at the Insizwa range in South Africa, in which a sill of norite passes downward into basic rocks, carrying more or less olivine.

A number of narrow prehnite veins an inch wide were seen in the diabase; the mineral analcite was observed with the prehnite in one of these veins.

On the north side of the mountain in the burnt part, and not far from the

bottom, there is a cave about 50 feet long which extends into the mountain 30 feet. It is 4 to 8 feet high and occurs in the diabase or gabbro which constitutes most of the rock on the mountain. The rock at the cave is much slicken-sided and is cut by numerous small quartz stringers. The floor is covered with blocks of rock fallen from the roof, so that its actual height could not be ascertained.

Serpentine, Peridotite and Pyroxenite

Serpentine rock occurs in many localities in the area which we mapped in the summer of 1918. Its importance as an "ore bringer" has been demonstrated at the Alexo nickel mine in the townships of Dundonald and Clergue where a deposit of nickel occurs at the contact of a mass of serpentine and andesite. It has been shown at the Alexo mine that the ore, which consists of pyrrhotite, pentlandite and chalcopyrite, is associated with the serpentine and owes its origin to this rock.

The importance of serpentine rocks is further shown in Reaume township[1] where chromite occurs in small quantities. The chromite in this township contains diamonds of microscopic size and, in addition, small quantities of platinum. None of these minerals—platinum, diamonds or chromite—occurs in economic quantities, but we believe, nevertheless, that all serpentine rocks should be carefully prospected in northern Ontario for these minerals, and also for asbestos and nickel.

The serpentine rocks, in the area covered by the writers, result from the alteration of olivine and pyroxene, although some of the pyroxene in many instances still remains unaltered. The most important mass of serpentine in the area mapped in 1918 is that at the Alexo nickel mine in Dundonald and Clergue townships, and is referred to under the heading of Nickel on page 63.

Another occurrence was found on Lightning mountain at the south end of Frecheville township. This serpentine area is described on page 66.

These very basic rocks are generally found in low-lying areas, in the neighbourhood of which the compass is no guide. Their frequent association with the diabase which has just been described suggests some genetic relationship between the two rocks. Serpentine can be seen grading into diabase across a width of some 20 feet in lot 10, concession I, Warden. Also, the serpentine appears to encircle the base of the Ghost diabase range which suggests a differentiation product at the base. Apart from these two cases, however, the serpentine appears to cut the diabase as in lot 12, concession I, Warden. Further, some of the pillow lavas in Munro township appear to be altered to serpentine, therefore the serpentine may be of different ages. Most of the rock, however, appears to be younger than the pre-Algoman (?) diabase and older than the (Algoman?) granite and porphyry. Narrow porphyry dikes can be observed intruding the serpentine in lot 7, concession VI, Beatty township. The Keewenawan diabase cuts the serpentine in the same locality and in lot 7, concession I, Coulson township.

The fresher specimens show some crystals or crystal outlines of olivine but usually they have been altered to serpentine and contain much dolomite and

[1] Ont. Bur. Mines, Vol. 23, Part I, 1914, pp. 47-48.

magnetite. A sample of this serpentine from a point on the line between lots 6 and 7 in the first concession of Coulson township and 385 yards north of the town line gave the following on analysis by W. K. McNeill:—

	Per cent.
Silica	39.08
Ferric oxide and alumina	7.84
Ferrous oxide	17.84
Lime	3.02
Magnesia	19.02
Carbon dioxide	2.79
Water	9.05
Alkalies (estimated approximately)	2.00
	100.64

Frequently, the serpentine contains a network of black magnetite veinlets which withstand the weathering and project above the white-weathering serpentine. Specimens of such material from lot 10 in the first concession of Warden township

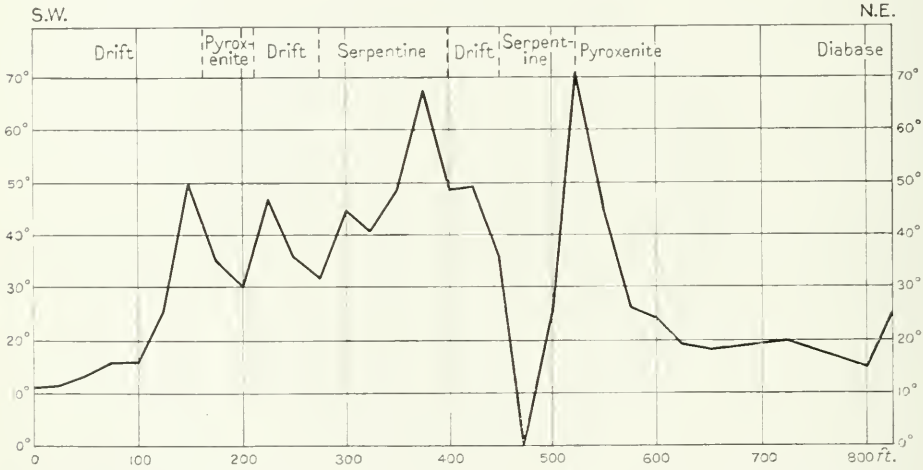

Fig. 25—Dips found in crossing serpentine, lot 8, in the second concession of McCool township.

were analyzed and found to contain no chromium or platinum. In other parts, the crevices are filled with narrow asbestos veinlets which are described under asbestos.

In the township of McCool exposures of serpentine and pyroxenite extend in a northwesterly direction from lot 8 in the second concession to lot 12 in the fourth concession. On the surface the serpentine along this belt appears nearly white with scattered specks and stringers of magnetite, giving a slightly mottled appearance. Originally the rock was a peridotite and the outline of the original olivine crystals is well preserved. The magnetite shows well developed crystals and is of the variety known as lodestone. The compass is of no use when crossing one of these deposits, as the magnetic variation is in some cases more than 65°. Dip-needle readings would suggest the desirability of carefully prospecting, possibly with a diamond drill. Figure 25 gives the dips found in crossing the exposure in lot 8 in the second concession of McCool township, the readings being taken at

intervals of 50 feet. The zero reading in the midst of the serpentine was rather surprising, though readily explained as the neutral zone in a magnetic field. The contact between the pyroxenite and the serpentine is quite sharp, as is the case in the peridotite deposits near Webster, N.C., where nodules of the orthorhombic pyroxene enstatite are found embedded in the peridotite, having solidified from the molten magma before the olivine. On the other hand, the contact between the pyroxenite and the diabase is not sharp, there being apparently a gradation from one to the other. The dip-needle readings, however, appear to indicate a break which was not observed in examining the rock. The outcrop of lot 10 in the fourth concession of McCool township shows not only veinlets of magnetite, but some schist with asbestos fibres about an inch in length. Further prospecting might reveal this valuable material in economic quantity.

Granites

In the south central part of Garrison township there is a boss of medium-grained reddish hornblende granite. This rock intrudes the greenstone, and is probably of Algoman age. It is everywhere quite massive, and in places sends dikes into the older basic rocks. Several contacts between the granite and the older rocks can be seen along the wagon road. In hand specimens it is difficult to recognize the quartz in the granite, but under the microscope the mineral is abundant. The chief constituents are arthoclase, microcline, plagioclase, hornblende and quartz, with scattered crystals of sphene, apatite and magnetite. At one place on the road there is a quartz vein carrying a little pyrite along the contact of granite and greenstone, but an assay of material from it showed no gold. Near the summit of the hill to the north of the road there is a flat or sill-like intrusion of grey mica granite in the greenstone, probably an offshoot from the main granite mass a short distance to the north.

M. B. Baker states that hornblende granite, which in places becomes a hornblende syenite, forms the whole of the north shore of Upper Abitibi lake and parts of South bay and the east shore of Lower Abitibi lake. Gold-bearing quartz veins occur in this granite at Point 48 A, South bay, and traces of gold can be obtained from a pegmatite dike on lot 4, concession C, Steele township, suggesting a genetic relationship between the granite and the gold veins.

Some massive hornblende biotite granite cut by diabase occurs along the Okikodasik river.

Massive, medium-grained, pink hornblende-granite occurs along the Abitibi river on lots 2, 3 and 4 in the fifth concession of Calvert township. Narrow pegmatite dikes, offshoots from the granite, intrude the Keewatin rocks in this vicinity.

The only gneiss observed in the area is the hornblende granite gneiss near mileage XCVII on the interprovincial boundary, and on the Canadian National railway in the west part of Sargeant township.

A coarse crushed grey hornblende granite, containing round orbicular masses or spherulites, occurs on lot 2 in the fourth concession of Carr township, and on lot 4 in the first concession of Wilkie township. The round white masses are

usually half an inch in diameter with a radiating structure frequently coming from a hollow centre.

All the granites are intruded by narrow dikes of Keweenawan (?) diabase.

The only granitic rocks found in the township of Michaud are in lot 8 in the third concession, and in lots 9 and 10 in the third and fourth concessions. This rock varies from a normal granite to a granite porphyry, and, so far as observed, shows no signs of mineralization. It is referred tentatively to the Algoman series, though there is no contact visible which will definitely settle the age.

Quartz-Syenite

There are two small bosses of massive red quartz syenite in Harker township. The rock is quite coarse-grained, consisting almost wholly of red feldspar crystals up to one-half an inch in length. Fresh pieces of the rock are very striking, and suggest value as an ornamental stone. These bosses of syenite were not observed in contact with other rock, but are likely of the same relative age as the granite previously mentioned.

With the exception of outcrops of granite on Abitibi lake, these few outcrops of acid plutonic rocks were the only ones observed to the south of Abitibi lake.

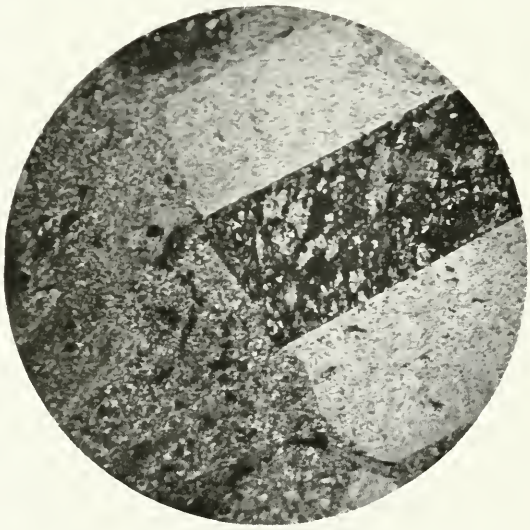

Fig. 26—Photomicrograph of feldspar-porphyry showing altered albite phenocryst in fine-grained groundmass, lot 8, in the fourth concession of Rickard township. Magnified about 20 diameters. Cross nicols.

Pegmatites, Feldspar, Quartz and Granite-Porphyry

These acid intrusions, some of which are offshoots from granite, intrude all the other rocks of the area except the Keweenawan (?) diabase. They occur as narrow grey and flesh-coloured dikes varying from 50 to 2 feet in width with the exception of two larger masses in concession III of Beatty township and in lot 12, concession II, Warden township. In the latter locality the pinkish porphyry is over one-quarter of a mile in width, and contains numerous large phenocrysts of feldspar and rounded quartz.

A granite-porphyry or rhyolite over one-quarter of a mile wide and frequently showing the spherulitic structure extends for 3 miles across concession III of Beatty township. The same rock extends eastward into the centre of Munro township, where it has not been separated from the Keewatin complex. A sample of the rock from lot 10, concession II, Munro, gave on analysis by W. K. McNeill, the following:—

	Per cent.
Silica	78.70
Alumina	6.56
Ferrous oxide	0.90
Ferric oxide	2.51
Lime	2.11
Magnesia	0.28
Soda	1.58
Potash	6.42
Carbon dioxide	0.42
Water	0.65
	100.13

The porphyry dikes on the Raty claim on which a small gold ore shoot was found consist of rounded phenocrysts of albite, feldspars showing zonal structure, quartz and hornblende in a microcrystalline groundmass of hornblende, chlorite, plagioclase, feldspar, quartz and apatite.

A quartz porphyry now altered to schist occurs on the Shallow river in lot 11, concession II, Wilkie township. There are a number of narrow porphyry dikes up to 20 feet wide and generally pink in colour, which intrude the greenstones and some of the diabase, along the south shore of Upper Abitibi lake. These dikes usually show distinct phenocrysts of feldspar, and sometimes quartz, in a fine grained groundmass. One dike from station 143 A. contains phenocrysts of albite, in a mixture of feldspar, quartz and secondary mica.

At point 100 A. on the south shore of Upper Abitibi lake a dike of feldspar-porphyry intrudes pillow lava and is itself cut by a dike of granite two inches in width.

On island 661 S.V., near the mouth of the Lightning river, a feldspar-porphyry dike is intruded by a trap dike two inches wide.

A pegmatitic dike intrudes iron-formation on the northeast shore of Lower Abitibi lake in lot 1, concession D, Steele township.

M. B. Baker mentions numerous beautiful granite porphyries and pegmatite dikes cutting the Keewatin greenstones near the granite rocks on the Abitibi lakes. Other pegmatites occur in the vicinity of Iroquois Falls and in south Bowman township.

The porphyries are in many places cut by the Keweenawan (?) diabase as shown on the map.

Keweenawan?

Certain dikes of quartz-diabase penetrate all the other rocks of the area and are classed as Keweenawan. The dikes usually dip vertically, and the majority of them strike nearly north and south. They vary from a few inches to 200 feet in width and are often traceable for miles. A typical sample from lot 6, concession I, Beatty township, was examined microscopically and found to consist of

labradorite laths partly altered to saussurite and sericite, augite partly decomposed to hornblende, and chlorite with a little quartz, biotite, apatite and magnetite. Intergrowths of quartz and feldspar are common.

Occasionally there are porphyritic varieties which have large white-weathering phenocrysts of greenish feldspar up to 2 and 3 inches in thickness. One of this type may be seen on the north boundary of Hislop township, in lot 9, a sample from which yielded, on analysis, 50.7 per cent. of silica. Another example may be seen on the Raty claim, Rickard township.

Accompanying the diabase in the vicinity of Painkiller lake are some small porphyry masses which are regarded as acid differentiation phases of the diabase magma. However, most of the porphyries in that area are not of the differentiation type.

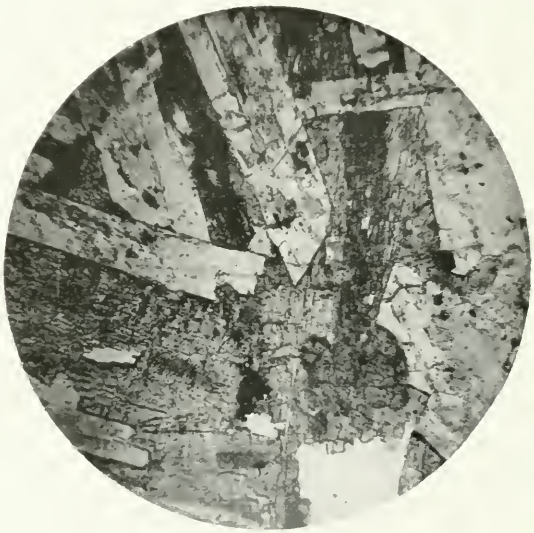

Fig. 27—Keweenawan (?) diabase dike, northwest of Mt. Smollett, Lamplugh township. Magnified 50 diameters. One nicol.

A dike of diabase, about 100 feet wide, occurs to the northeast of Mount Smollet, where it strikes northeast and southwest. It is very fresh under the microscope, containing both labradorite and andesite in lathlike structure, Fig. 27, together with augite and a little quartz. This rock is probably one of the latest rocks in this area, and a member of the Keweenawan. Only a few dikes as fresh as this were noted. A similar one occurs in a high ridge on the west side of Lightning river, two miles from its mouth.

A fresh olivine diabase is found on the east shore at the north end of the narrows between Upper and Lower Abitibi lakes. Similar dikes may be seen on lot 2 in the fourth concession of Carr township, on lot 1 in the second concession, Taylor township, and on the Okikodosik river immediately above the Canadian National railway.

Pleistocene

About 90 per cent. of the area is drift-covered, two-thirds of the unconsolidated material being suitable for agricultural purposes, the remainder consisting largely of sand and peat. These deposits are often quite thick, the hills at Nellie lake being about 200 feet high, and some well holes put down at Matheson showing over 100 feet of drift. The deposits consist of boulder clay, stratified clay, sand, gravel, silt, peat and moss. As a rule the clay deposits occupy the low-lying parts of the area, including that portion of the country most suitable for agriculture. Many areas of clay, sand, gravel and peat have been differentiated on the map.

In an article, "Lake Ojibway: Last of the Great Glacial Lakes," A. P. Coleman[1] refers to the wide extent of a vast glacial lake, formed to the north of the height of land, in Ontario and Quebec, with stratified clay formed in the deeper parts, and sand and gravel deposits along its southerly shore line near the height of land. He advances the theory that the present large lakes, Abitibi, Night Hawk and Frederick House, are remnants of the larger lake Ojibway, left after the retreat of the Labrador ice sheet.

More recently, Jos. Keele[2] has examined the Pleistocene in parts of northern Ontario and suggests the possibility of a number of old glacial lakes, with intervening areas of boulder clay and other glacial deposits, not covered by the water of a glacial lake.

The stoneless clays found at or near the surface in northern Ontario, are nearly all composed of sediments deposited in glacial lakes which were formerly of large dimensions. Lake Abitibi may be taken as an example of the shrunken remnant of a once extensive lake of this character. The distribution of the clays are governed, therefore, by the extent of territory covered by these lakes and the height to which the water encroached on the land surface, and to the subsequent drainage which extinguished or partly extinguished these lakes, and made their sediments available as land surface. Considering the land area of northern Ontario as a whole the areas underlain by stoneless clay sediments are very small and widely scattered.

That the large shallow lakes of the present day are remnants of much larger bodies of water is proven by the wide areas of stratified clay around these lakes. High banks of stratified clay are found along the south shore of Upper Abitibi lake near the mouth of the Mattawasagi river. In the latter locality the banks are at least 30 feet higher than the lake and contain an occasional rafted boulder, dropped from a floating iceberg. Similar stratified deposits can be observed at a few points up the valleys of other rivers along the south shore of Upper Abitibi lake, and for at least 8 miles along the Frederick House river below the lake of the same name. In fact, the clays can be traced almost continuously from Abitibi lake westerly along the Abitibi river and up the Driftwood river to a point not far from Night Hawk lake, suggesting that these two lakes were probably connected at one time.

The lake clays are as thick as 50 feet as shown in the V-shaped valley of

[1] Eighteenth Report, Bureau of Mines, Ont., 1909.

[2] Summary Report, Mines Branch, Department of Mines, 1917; Investigation of Clay and Shale Resources, p. 102.

Abitibi river and by two drill holes sunk at Matheson by the T. and N. O. Railway Commission. If the top of the boulder clay at Twin falls, elevation 835 feet, be taken as the base of the lake clays, and the stratified clay hill near the mouth of the Mattawasagi river, elevation 905 feet, be taken as the top of the lake clays, there would be at least 70 feet in thickness of these sediments.

Underneath the clays the rocks are usually polished and striated and frequently in the form of *roches moutonnées*. Lying directly on the rock there is generaly stratified clay, but there may be boulder clay as at Twin falls, where a bed at least 10 feet thick and at an elevation of 825 feet, lies on rock and is overlain by a great thickness of stratified clay. A small amount of boulder clay may be seen on the Frederick House river on lot 3 in the third concession of Little township at an elevation of approximately 880 feet. In other places, as in the vicinity of Cochrane, elevation 908 feet, the boulder clay may be seen at the present surface.

Fig. 28—Stratified clay lying on boulder clay. Twin falls, Abitibi river, Teefy township.

The sand and gravel occur as moraines, kames, eskers, outwash plains and lake deposits.

About two miles southwest of the mouth of Ghost river, in the Indian reserve, there is a flat plain-like deposit of sand, evidently an old lake deposit, that probably was formed in the shallow water of the old lake of which Abitibi lake was a part. A similar plain was observed two miles south of the one just referred to.

Characteristic glacial deposits can be observed in various parts of the area south of Abitibi lake. Along the boundary line between Garrison and Michaud townships are several esker ridges. Some of the sloping sand areas seen in Garrison and Harker townships may be outwash plains. A morainic deposit of sand and gravel and boulders can be followed for several miles in a north and south direction in the central part of Holloway township.

A deposit of water-washed sand and gravel was found on the south side

of a high ridge near its summit on the Perron claim, L. 7307, in Harker township. The probable explanation of such a deposit is that it was formed by marginal drainage while the ice-sheet still filled the valley to the south.

Extensive morainic and other glacial deposits from a quarter of a mile to two miles in width can be traced for 36 miles from Bowman township northerly to Hughes station on the Canadian National railway. In places the deposits are covered by lake clays and clay loam, showing that there was much damming in glacial times. Clay overlying morainic deposits may be seen near the junction of the Shallow with the Black river. Trenches up to 20 feet in depth immediately south of the town of Matheson required in the construction of a water supply system, and three deep well-holes at Matheson also show clay lying on sand and gravel.

Fig. 29—Trilobe mountain, McCool township, showing two eskers, the one near the lake being about 30 feet high.

The kame deposit immediately south of Matheson comprises coarse stratified sand and gravel probably deposited by a sub-glacial river as the ice retreated.

The highest drift deposits are the sand and gravel morainic ridges immediately east of Nellie Lake station. These hills rise 250 feet above the surrounding plain, or have a summit elevation of approximately 1,250 feet, and were probably islands in an old glacial lake. On the east side of these hills are terraces which may have been formed at different levels as the lake lowered.

In most of these deposits there are numerous kettle lakes which form the source of clear-water creeks. Many other kettle holes are dry.

J. G. McMillan refers to a large sand area extending northwesterly from Frederick House lake and paralleling the Frederick House river a short distance from it, as shown on the map.

These sandy deposits are unsuitable for farming, but, when convenient, are used for railway ballast, road dressing and construction purposes. Much of the jack, red and white pine covering these deposits is suitable for ties and lumber.

Locally, the townships of Michaud and McCool are spoken of as sand plains. This description, however, gives an erroneous impression as the country is decidedly rolling, though considerable areas are level. Apparently the surface deposits are to be attributed to the accumulation of glacial material which consisted principally of sand. The most striking feature of these deposits is a most elaborate system of sand ridges, Fig. 30, which presumably were originally eskers. In consequence of a fire which burned practically all vegetable material over a large area, leaving the sand without bonding material, these eskers are being remodelled by wind so that some of them have the appearance of dunes, and in the early summer before vegetation had started this area presented the appearance of a desert. In the later summer, however, when most of the area was covered by grasses and other low plants, the landscape was more attractive. The soil except on the ridges is in the nature of a sandy loam in which certain types of wild grasses and huckleberries thrive. It should be an ideal place for growing small fruits, other conditions being favourable.

Fig. 30—Sand ridge, presumably an esker, now being remodelled by winds, Michaud township.

Throughout the townships of Michaud and McCool are numerous kettle lakes, most of which have no apparent inlet. The largest of these, Perry lake, Fig. 4, is more than a mile long and half a mile wide, and has an outlet about 15 feet wide.

Muskegs or Peat Bogs

The muskegs or peat bogs cover approximately three per cent. of the map-area, usually occurring in the poorly drained parts, but not necessarily at low elevations. They vary in size from a few acres to 3,000 acres, and are composed of sphagnum and other mosses up to 15 feet in depth. The surfaces of the bogs are almost treeless, or contain small black spruce trees, an inch or two in diameter, which gradually increase in size as the edge of the bogs is reached. The two largest peat bogs near railway transportation occur at Nellie lake and at Mileage 240 on the Timiskaming and Northern Ontario railway in Newmarket

Fig. 21.—View of Frederick House river looking down stream, lot 8, in the first concession of Mann township. The old channel where High falls was located is shown on the left of the illustration. The new channel on the right shows where the river has cut through an embankment fifty feet in height.

township, while many smaller ones occur along the Canadian National railway between Hughes and Low Bush stations. The bogs adjacent to the Timiskaming and Northern Ontario railway were examined by A. Anrep of the Canadian Geological Survey during part of 1918. Mr. Anrep found the largest bog, viz., the Nellie lake bog, to be of good quality and to have a thickness of about 10 feet. Many of the bogs could be drained as they form the source of numerous streams.

Other large peat bogs, more remote from the railway, occur in Rickard, Edwards and Moody townships. Some of the larger bogs situated near the railway, such as the Nellie lake bog, may at some time afford a large supply of fuel if the coal supply should be insufficient.

Fig. 32—Faults in clay, Frederick House river, township of Little, May, 1910.

Frederick House Lake and River

In the autumn of 1909, after the discovery of gold in Porcupine, Father Paradis tried to facilitate prospecting on his claim by lowering the water in the Frederick House river. This was accomplished by making a small cutting in the clay embankment next High Falls, in lot 8, concession I, Mann township. The water at the Falls flowed over a shoulder of compact rock. The clay on the right bank was 50 feet or more in thickness, and the water having been once diverted into the soft clay, soon formed a deep gorge resulting in the disappearance of the 46-foot falls and the destruction of a valuable water power. In May, 1910, W. G. Miller and C. W. Knight spent a few days examining the effects which the lowering of the water had had on the banks and bed of the river. A detailed account of this is given by Mr. Knight.[1] P. E. Hopkins passed down the river in August, 1918, and found that much erosion had taken place since 1910. Water flows quietly around the point where High Falls was situated. The falls have worn back far enough to lower the river level and drain the south half

[1] Can. Min. Journal, Feb., 1911, pp. 91-93.

of Frederick House lake. The cutting down of the stream would have extended back much farther towards Night Hawk lake had not an artificial dam been built across the Frederick House river at Connaught station to prevent further wearing back, and for the purpose of making the upper Frederick House river and Night Hawk lake more navigable.

Naturally the greatest cutting down of the river bed has taken place immediately above High Falls. The deep cutting has extended back for 3 miles to lot 5, concession V, Little township, where a rock barrier has been encountered, forming a 10-foot falls. In the 3-mile gorge the water is swift and there are two 3-foot rapids. The undermined clay banks have tumbled down, and the tree tops have been tossed over to almost meet those from the opposite bank. Above the 10-foot falls the current is sluggish for 2½ miles to a point where the river has cut through sand and gravel underlain by boulder clay, which contains some boulders over 6 feet across. The river above this last rapid is swift and still deepen-

Fig 33—Howey-Cochenour-Willans camp, Holloway township (Lightning river area.)

ing its bed. The south half of Frederick House lake is now a sand and clay flat with the river winding through it. Settlers built houses and attempted to cultivate the old lake bottom, but found the soil unsuitable for crops.

The drift deposits along the Frederick House river are stratified lake clays covered with loam, except the boulder clay on lot 3, concession III, Little township, mentioned above. Half a dozen isolated rock outcrops, viz.: quartzose schist, agglomerate, conglomerate (?), basalt and tuff with large bomb-like inclusions occur along the river between lot 5, concession III, Little township and the old High falls. Between High falls and Three rapids no rocks occur, and the banks are low. At either end of the Three rapids there is serpentine, the intervening rock being gabbro. A greenstone schist occurs on the river near the centre of concession V, Little township, with serpentine to the north and south of it.

Economic Geology

Gold

In many localities in northern Ontario where gold has been discovered there are occurrences of acid intrusives that have suggested a genetic relation between the acid rocks and the gold deposits. These rocks are usually of an acid porphyry or granite type. In the area to the south of Abitibi lake there are occasional narrow feldspar-porphyry dikes. A few of these occur along the shore of the lake near the mouth of the Mattawasagi (Teddy Bear) river, where gold has been found, and these are described elsewhere in this report. In Garrison township there is a boss of hornblende granite, and in Harker two small bosses of hornblende syenite; otherwise, with the exception of the rhyolite flows in the Keewatin, all the igneous rocks of the area are of a basic character. No porphyry dikes have been observed in the vicinity of the Howey-Cochenour-Willans gold discovery, and this is one of the few places where such acid rocks are not found near gold deposits.

In other parts of the area, namely, in Munro and Rickard townships and at Painkiller lake, where gold deposits occur, one will find porphyry masses. The magmatic waters connected with these porphyry intrusions may have had much to do with the gold deposition.

Lightning River (Holloway and Harker Townships)

The chief interest in the area centres in its gold discoveries, and while a few claims have been partly prospected, on the whole only a limited amount of work has been done, due to the lack of prospectors and the distance of the area from a railway.

Most of the work has been done in the southwest part of Holloway and the southeast part of Harker, adjacent townships.

During the geological examination of the area to the south of Abitibi lake a few narrow quartz veins were noted by us in the townships of Garrison, Frecheville and Harker, away from the known area in Holloway and Harker townships, where gold had been discovered by prospectors. Samples of the quartz veins were taken for assay, and values up to 80 cents per ton were obtained. These veins occur on some of the higher ridges, where the rock is readily accessible and probably harder and less likely to contain gold-bearing veins than in lower land, where trenching would be necessary to expose the rocks and any possible veins. There are a few isolated outcrops of schist in Harker and Holloway townships to the south of the Ghost range, and there is probably an area of altered rocks along the valley of the Mattawasagi (Teddy Bear) river, but owing to the large amount of drift it would be difficult to prospect.

Gold was discovered in the Lightning river area in August, 1917, by Messrs. Howey, Cochenour and Willans. At that time it was a difficult matter for prospectors to get into this little known area. During the summer of 1918, however, a rough road was built from near the Croesus mine into the Howey-Cochenour-Willans claims, this road being a continuation of the road which runs from Matheson to the Croesus mine. From Matheson, on the Timiskaming and Northern Ontario railway, to the Howey-Cochenour-Willans prospect, it is more than 40 miles by road. The area may also be entered by going to La Reine, north of Upper

Lake Abitibi on the Canadian National railway. La Reine is 72 miles east of Cochrane, and is in the Province of Quebec immediately east of the interprovincial boundary. A gasoline boat may be taken at La Reine, and Upper Lake Abitibi reached by going down the Okikodosik river a distance of about 5 miles. From the mouth of this river it is about 17½ miles south-west across Upper Lake Abitibi to the mouth of Lightning river. A small gasoline boat may be taken about six miles up Lightning river to a point where the river forks, at which point a portage about six miles long leads south directly to the Howey-Cochenour-Willans prospect. Lumber camps were built in the autumn of 1918 a few miles up the Lightning river, and also a few miles up the Mattawasagi river (Teddy Bear). The establishment of these lumber camps requires frequent trips by the large

Fig. 34—Entrance to inclined shaft, Howey-Cochenour-Willans gold prospect, Lightning river area, Holloway township.

gasoline freight boats from La Reine or Low Bush, in order to keep the camps supplied with food and other material. The members of our party were very kindly treated by officers of the Abitibi Power and Paper Company, and we were shown hospitality not only at their lumber camps but also on their freight boats.

The boundary lines of the eight townships south of Upper Lake Abitibi were surveyed during the summer of 1918 by Provincial Land Surveyor H. J. Beatty, but the lot and concession lines were not run. These newly surveyed townships, namely, Stoughton, Frecheville, Lamplugh, Rand, Garrison, Harker, Holloway and Marriott, were named after men well known in the mining and geological world.[1]

[1] Can. Min. Jour., May 1st, 1918, p. 146

Howey-Cochenour-Willans.—Work on the Howey-Cochenour-Willans claim, No. 7135, has been largely confined to an examination of the vein in which the original discovery of gold was made in August, 1917. This vein has been traced by means of pits and trenches a distance of 175 feet. At the westerly exposure it is in the basalt, and at the easterly exposure in the rhyolite. At the west outcrop in the basalt an inclined shaft has been sunk on the vein where the dip is 23° south. When the property was last visited by us the shaft had reached a depth of 35 feet and the vein was still in the basalt, which rock lies to the north of the rhyolite, the strike of the contact of the two rocks being to the south of west and the dip being about 80° south. From information furnished by J. W. Morrison, who was manager of the property at that time, it has been learned that when the shaft penetrated the contact the low dip of the vein was maintained, and the contact between the rocks had been displaced a distance of four feet on the plane of the vein. This evidence points to the formation of the vein along an inclined fault that intersected the rock formations, Fig. 35.

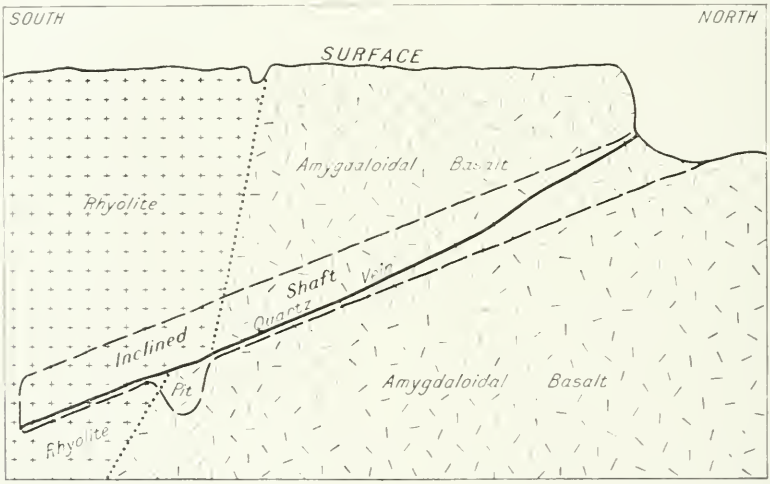

Fig. 35—North and south vertical section, showing basalt and rhyolite contact, and location of quartz along a fault that crosses the two rocks with a throw of 4 feet. Inclination of shaft is 23°. Howey-Cochenour-Willans gold prospect. Scale approximately 20 feet.

The lode structure, as revealed in the shaft to a depth of 35 feet, shows a main persistent quartz vein, varying in width from an inch to 10 or 12 inches, with an average width of about 4 inches. Roughly paralleling this main vein there are a number of narrow quartz veinlets usually less than an inch in width and more or less discontinuous, the whole partaking of the character of a sheeted zone produced by shearing that accompanied the formation of the fault. This zone varies in width from about 2 to 3 feet, Figs. 36, 37.

The quartz for the greater part is of a milk white colour and, where not fractured by secondary movement, is rather coarse-grained and characteristic of primary quartz in veins. Where the primary quartz has been granulated, Fig. 38, usually in a direction roughly parallel with the walls, there is an abundance of secondary calcite with pyrite and a small amount of chlorite. Some pale-coloured

zinc blende and a little galena are also present. The quartz along these crushed zones is in very fine grains, several of which show by their orientation that they are parts of a larger crystal. Fragments of greatly altered country rock are enclosed in the quartz of the vein. Some of these fragments are of different character from the enclosing altered basalt wall rock. Most of the pyrite and other sulphides occur in the crushed areas, but these are sometimes seen in the clear

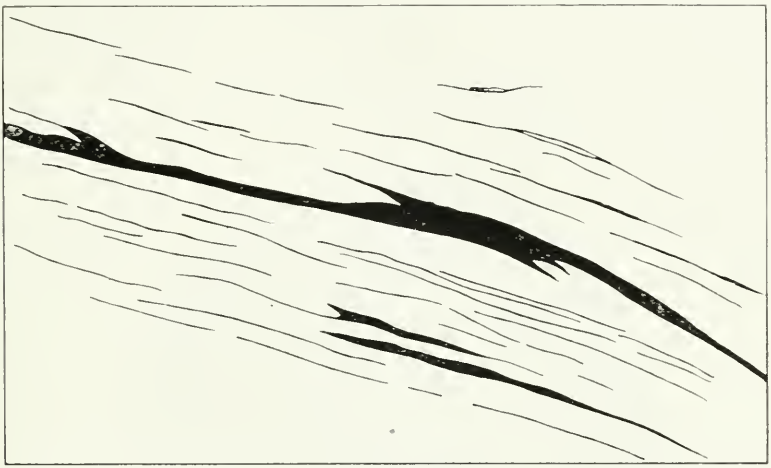

Fig. 36—Sketch showing quartz veins at Howey-Cochenour-Willans gold prospect, Holloway township; east walls at depth of 35 feet in shaft. The length of vein system in sketch is about six feet. The main quartz vein is shown by the heavy black part; parallel stringers of quartz occur on each side of the main vein.

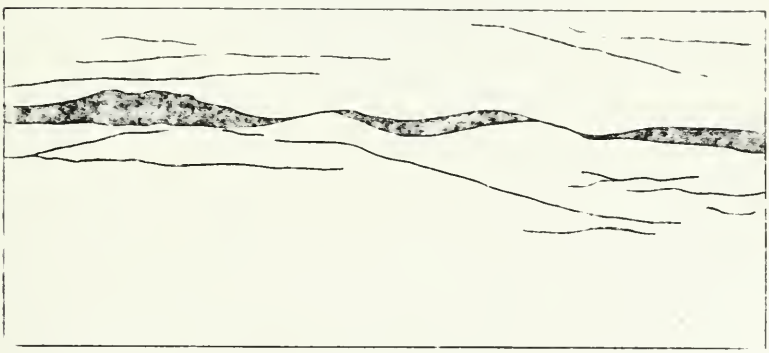

Fig. 37—Sketch showing quartz veins at Howey-Cochenour-Willans gold prospect, Holloway township. Bottom of shaft at depth of 35 feet showing quartz vein in black with more or less parallel quartz stringers.

white quartz. Some plagioclase is also recognized in fractured areas. The gold usually occurs in a fine condition with the pyrite, but samples from the main vein often contain gold in the quartz visible to the eye.

Near the veins the wall rock, which is a basic lava, has been greatly altered by circulating waters to carbonate and chlorite, and is penetrated by veinlets of quartz, calcite and chlorite. The lath-like structure, Fig. 39, in the plagioclase is

well preserved in parts of the wall rock, but the ferro-magnesian mineral is altered to secondary minerals. This alteration decreases away from the veins.

The minerals found in the veins of Holloway and Harker townships are characteristic of veins formed at intermediate temperatures, as described by W. Lindgren in "Mineral Deposits." High-temperature minerals such as tourmaline, pyrrhotite, magnetite or specularite have not been observed in these veins. Some of the quartz in the Howey-Cochenour-Willans vein has crystallized in open spaces in prismatic and rhombohedral forms, indicating a slow filling of the vein. The well defined walls also indicate an open fissure. After solidification the vein was subjected to fracturing with a deposition of considerable calcite and pyrite in the fractured areas of the quartz.

Fig. 38—Section showing granulation of primary quartz. Secondary calcite and pyrite are present. Howey-Cochenour-Willans vein, Holloway township. Magnified about 20 diameters. Cross nicols.

The shaft is reported continued to a depth of about 70 feet, and work was stopped after the rhyolite had been penetrated for 20 feet.

Assays showing the presence of gold in rhyolite have been reported by prospectors from various places along the bands of rhyolite. Some samples taken by the writers have also shown the presence of gold. This rock contains in places considerable iron pyrites and is frequently intersected by minute veinlets of quartz, which may be responsible for the presence of the gold. Being a lava flow, it is unlikely that gold is present as a primary constituent in sufficient quantity to be shown by the ordinary fire assay. Some samples of rhyolite showing no pyrite or veinlets of quartz gave no gold on assay, while others showing these secondary minerals gave assays up to $3.80. We were informed that a number of assays from the rhyolite band south of the shaft on the Howey-Cochenour-Willans property gave an average of $1.50 in gold. This is not surprising, since the rock in many parts carries pyrites and minute veinlets of quartz.

Willans Claim (7248).—Some prospecting has been done on this claim, which lies directly east of the discovery claim (7135) in Holloway township. The rhyolite outcrops at points across this claim, and some portions where work has been done, were found to be heavily mineralized with fine-grained iron pyrites and to contain minute veinlets of quartz. Grab samples from one small pit gave $1.60 and $3.80 per ton. We have since been informed that from another place two samples of mineralized rhyolite over lengths of two and three feet contained $8.00 and $5.00 per ton in gold.

Taylor-Horne Claim (7261).—This claim is located in Holloway township adjacent to the west boundary of the township. Here there is a quartz vein with strike N. 82° E. that can be traced for 125 feet east from the boundary line to

Fig. 39—Basalt wall rock, from shaft at Howey-Cochenour-Willans gold prospect, Holloway township. Magnified 20 diameters. One nicol.

the edge of a bluff rising from the drift. The vein dips 75° S., is narrow, and varies greatly in width. At the easterly exposure it is 8 inches wide where a shallow pit has been made. At another point it is 4 inches in width and well mineralized with iron pyrites, copper pyrites, zinc blende and galena. Some gold was observed at one point in the vein. The enclosing rock is an altered basaltic type. Some selected material from this vein gave on assay $4.40 in gold.

Cochenour, in Harker township (7247).—This claim joins the Taylor-Horne claim on the west side of the boundary line. Work has been done on the strike of the Taylor-Horne vein which towards the west diminishes in width. On the Cochenour claim there is a mineralized zone, but with very little vein quartz exposed. The basalt, which is the country rock, has been greatly impregnated with silica and carbonate solution and iron pyrites over a width of 5 to 10

feet. A little native gold was observed in a joint plane in the altered rock 230 feet west of the boundary.

McDonald Claim (7324).—On the McDonald claim some surface work has been done on three quartz veins in the rhyolite. These veins are from 2 to 10 inches in width and carry iron pyrites and copper pyrites. The most prominent vein which strikes N. 15° E. and dips 75° easterly, has been traced on the surface for 150 feet. Some native gold has been reported from this vein, and values of $8.40 and $7.60 in gold were obtained from selected samples of quartz and rhyolite, carrying iron pyrites.

Fig. 40—Narrow gold-bearing quartz vein, Taylor-Horne claim, Holloway township.

Cragg Claim (7248).—In the southeast part of Harker township there is a band of rhyolite similar to the band which runs through the Perron and McDonald claims about three-quarters of a mile to the north. The rhyolite has been stripped on the Cragg claim in a northeast direction for 230 feet with an average width of 30 feet. The rhyolite is intersected by veins and irregular masses of quartz carrying a small amount of iron pyrites. The rhyolite contains in places pyrite and specularite. Low values in gold from this deposit are reported by Mr. S. Cragg. At the southwesterly end of the stripping the rhyolite is intruded by a minette dike 15 inches in width.

Hurd Claim, L. 7312.—The Hurd claim, L. 7312, is in the southeast part of the township of Harker. The vein of quartz which we saw on this property is from one to eight inches wide, with a strike of north 107° east, magnetic, and a vertical dip. The vein has been traced about 50 feet by trenching, and some blasting has been done. Two samples were taken, both of which were shown by assay to contain no gold. The country rock is a coarse gabbro or diabase.

Perron Claim, L. 7307.—The rhyolite lava flow, which is found at the Howey-Cochenour-Willans prospect, continues westerly and passes through claim 7307 in the southeast part of Harker township. Part of the south side of the flow is rusty on this claim and has had some trenching done on the rusty part. We sampled this rusty portion across a 7-foot section, and an assay of the sample gave $2.40 per ton in gold.

Fig. 41—Rhyolite intersected by quartz, Cragg claim, Harker township.

Gold in Schistose Carbonate Rock.—On the west boundary of Holloway township there is a hill about 10 chains south of the Mattawasagi (Teddy Bear) river. The rock on this hill is schistose and contains much carbonate which is probably ankerite. This carbonate schist was sampled and found to carry 80 cents per ton in gold.

Garrison Township

On the south boundary of Garrison township, about three chains west of the 4-mile post, a small quartz vein, averaging two or three inches in width, strikes north 133° south. The vein is exposed for 100 feet and contains, in addition to quartz, some calcite. A sample of the vein, taken here and there along the strike, gave on assay 40 cents per ton in gold.

At the north end of Garrison township there are several irregular quartz stringers a few inches in width associated with rocks that are partly schistose. These quartz veins are found about an eighth of a mile south of the southwest corner of Rand township, just north of an extensive swamp. One of the quartz veins was sampled and assayed and found to contain no gold. About a mile and a third west of these quartz stringers there is a prominent hill half a mile south of the south boundary of the Abitibi Indian Reserve. On the west side of the hill a small quartz vein a few inches in width was sampled and found to carry 40 cents per ton in gold.

McCool Township

The only evidence of vein formation observed in the Keewatin in McCool township was on the hill in lots 9 and 10 in the second concession. Fig. 3. A few claims have been staked here, but little prospecting has been done.

Gold on Abitibi Lake

Gold was reported on Lake Abitibi by R. W. Coulthard in the Report of Exploration of Northern Ontario in 1900. Later, in 1906, there was a rush to the area and a large number of claims were staked along the shore of the lake and on the islands. The principal discoveries of that time were described by W. G. Miller in the Sixteenth Report of the Bureau of Mines, and by M. B. Baker in the Eighteenth Volume of the same publications. Since that time little has been done in prospecting around the lake.

W. G. Miller[1] gives a description of the gold-bearing deposits on Upper Abitibi lake that occur near the mouth of the Mattawasagi (Teddy Bear) river and easterly to a bay just east of the interprovincial boundary between Ontario and Quebec.

The half dozen deposits examined occur in rock of Keewatin age. These rocks here consist essentially of green schists, which are cut by dikes of fine grained granite or porphyry, varying in width from a few inches to fifteen feet or more. They have been shattered, narrow cracks running across them, characteristically transversely from wall to wall. These cracks are filled with quartz, and there are also at times lenses and irregular masses of quartz, replacing the dike material, or enclosed between it and the wall rock. Fragments of the dikes are frequently cemented by quartz, thus forming a breccia. The dike material is at times changed to sericite schist. The dikes have been impregnated with iron pyrites which is now altered, to a considerable extent, to iron oxide. The pyrites appears to be the gold-bearer. "Colours" can be obtained by panning the dikes, but the highest fire assay from samples taken by us gave only $3.40 per ton. Copper pyrites is at times associated with the iron pyrites.

One of these occurrences can be seen on island 524 S.V. near the mouth of the Mattawasagi river.

In the same report[2] there is a description of a gold-bearing quartz vein on Shaft island, B.C. 173, in Lower Lake Abitibi.

[1] 16th Report Ont. Bur. Mines, 1907, Part I pp. 219, 220.

[2] Ibid, p. 219.

The auriferous quartz vein on Shaft island varies in width from about four feet to a few inches. It has a vertical dip with strike east and west, and cuts a massive igneous rock which may be called diabase. This rock has a somewhat fresh appearance, and seems to belong to the newer series of eruptives similar to that of the post-Middle Huronian diabase of the Cobalt area. This Abitibi diabase, like that of Cobalt, carries quartz as a characteristic constituent. Iron pyrites together with a little copper pyrites and a dark coloured zinc blende occur in the quartz vein. Fine gold is frequently visible in the quartz. The vein cuts across the island for a distance of over two hundred feet, and disappears into the water on both shores.

Referring to this deposit in a later report M. B. Baker[1] remarks that the diabase cuts the Keewatin, but is intruded by a series of aplitic and also lamprophyritic or dark-coloured dikes. He also draws attention to the similarity of the diabase to that of Cobalt. Diabase of various ages occurs in the Abitibi area. Some of the rather fresh-looking dikes are found to be intruded by feldspar-porphyry dikes that in other parts have frequently been referred to the Algoman age. As the gold mineralization is believed to belong to the Algoman period it is reasonable to think that some of the rather fresh-looking diabases, as at Shaft island, may be pre-Algoman in age.

To the types of gold deposits on Abitibi lake, described by W. G. Miller, M. B. Baker[2] adds two others, namely, quartz veins in granite; and quartz veins and small stringers in a rusty weathering dolomitic rock of Keewatin age. The first of these occurs on the west shore of South bay, near Point 48 A., and the second on the east shore of the lower lake on Point 16 A. Baker states that neither of these deposits is of economic value.

Munro Township and Vicinity

Claims were first staked for gold in Munro in 1908, and work has been going on almost continuously on one claim or other since that time, in and around the southwest corner of the township. A good wagon road connects the locality with the railroad at Matheson. Up to the end of 1918 approximately $260,000 in gold has come from three properties, practically all from the Croesus. The gold-bearing quartz veins occur in sedimentary rocks and Keewatin greenstones which are intruded by an occasional porphyry dike.

The earlier mining was in the sedimentary rocks on long narrow quartz veins, rarely more than a foot in width, which strike slightly north of east and dip almost vertically. Iron pyrites is the chief sulphide; galena and molybdenite occur in lesser amounts and visible gold is present. Such veins were mined previously to 1916 on the following properties: Abate, American Eagle, Munro, Detroit-New Ontario and Gold Pyramid, the latter two having produced a small amount of bullion.

Extremely rich ore was found in the adjacent greenstone to the north in 1914 on the Dobie-Leyson claim afterwards known as the Croesus, which has proved to be the most important property in the area. The vein runs north and south, dips 26° to the east and carries much coarse gold, with considerable pyrite

[1] 18th Report Ont. Bur. Mines, 1909, p. 269.
[2] Ibid, p. 270.

and a little arsenopyrite. In the greenstone on the opposite or southern side of the sediments on the Quinn lot in Hislop township, an interesting gold-bearing quartz vein carrying copper pyrites, pyrrhotite, galena and zinc blende was found in 1918.

Numerous mining locations, few of which are working at present (January, 1919), will be described briefly, commencing with those in the sedimentary rocks.

Abate.—On the Abate claim, lot 4, concession I, Beatty township, there are a number of small parallel quartz veins striking 15° north of east, dipping 80° to the north and conforming to the strike and dip of the country rock, which is greywacké schist. Some quartz stringers cross-cut the intervening schist. Much pyrite, considerable molybdenite and a little visible gold occur in the veins. The Hudson Bay Mining Company did trenching, test-pitting and sampling in 1914, but did not exercise their option.

American Eagle.—On the American Eagle, southeast quarter of south half of lot 10, concession I, Munro township, a shaft was sunk about 75 feet and some cross-cutting done in 1912. The plant was completely burned in 1916.

Detroit New Ontario.—The greatest development on auriferous quartz veins in the sedimentary rocks has taken place at the Detroit New Ontario property where a 100-foot shaft has been sunk and 200 feet of drifting and cross-cutting done on three narrow quartz veins. The main vein strikes east and west and continues intermittently for 1,300 feet to the Guelph shaft; it dips 80° to the south. The vein has a regular width of about 10 inches, and contains pyrite and visible gold in places. Some gold was produced by a small prospecting stamp mill on the property. Work was suspended in August, 1911, and all buildings burned in July, 1916.

Gold Pyramid.—At the Gold Pyramid mine, in lot 11, concession VI, Guibord township, there are two prominent quartz veins in quartzite schist. On the southern of these the development work consisted of a shallow shaft, an open cut, and some trenching in deep soil to the south. The vein, which dips to the south, has been exposed for about 250 feet. The northern vein, which is about 30 inches wide in one place, has been traced for 400 feet, and a shaft was being sunk on it (August, 1911). Pyrite and fine galena are plentiful, with visible gold in places. A 5-stamp mill erected in 1911 has treated considerable ore and produced some bullion. Some ore from the Croesus was treated in the company's mill; but the plant like all the others in the area was completely destroyed by fire in 1916.

Munro Mines.—The Munro mines, locally known as the Guelph, in the southeast corner of lot 11, concession I, Munro township, are entirely in the slates of the sedimentary series. The first operations in the area were at this property, where a shaft was sunk 92 feet on an east and west narrow quartz vein carrying pyrite. Some drifting was done on the 60-foot level, but no further work has been accomplished since 1910.

Buff-Munro.—During parts of 1916 and 1917 the Buff-Munro Mines, Ltd., did some trenching and sank a 40-foot shaft on the Brown veteran lot, the north half of lot 7, concession I, Munro township. William Fairbairn, who was in charge of operations, stated that the vein runs north and south and dips to the east, but in sinking it disappeared at a depth of about 17 feet. Gold and considerable mispickel occur in the deposit.

Burton-Munro.—The Burton-Munro Mines, Ltd., did considerable underground prospecting on the north half of lot 2, concession I, Munro township, in the greenstone, during parts of 1916, 1917, 1918 and 1919. An inclined shaft at an angle of 55° has been sunk 318 feet with stations at the 148 and 300-foot levels. On the first level about 100 feet of work and on the bottom level 735 feet were accomplished. In addition approximately 1,000 feet of diamond-drilling and considerable trenching were done. Camps were rebuilt after the fire of 1916, but mining operations were temporarily suspended in February, 1918. Charles Millar, Toronto, is president.

Fig. 42—Croesus gold mine, township of Munro.

Croesus.—In the spring of 1914 a spectacular gold showing was found on the north central part of lot 10, in the first concession of Munro township, by a prospector named Welsh. When the line was surveyed between the Welsh and adjoining Dobie-Leyson claim, the rich vein was found to be on the latter claim, 15 feet from the Welsh boundary. The Dominion Reduction Company, Ltd., of Cobalt, bought the claim for approximately $75,000 and incorporated it with the Welsh claims, forming the Croesus Gold Mines, Limited. Work commenced in July, 1915, and continued with little interruption until February, 1918, when mining operations ceased. The total production to the end of 1918 amounted to $259,953 in gold and a small amount of silver, coming principally from the upper part of the workings.

The quartz vein, which is about 200 feet long, strikes north and south and dips at an angle of 26° to the east in a fairly massive Keewatin diabase and pillow lava (altered basalt). It is somewhat lenticular in form, and varies

from a few inches in width on the north to a few feet on the south, where it has been cut off by a series of east and west faults. Apparently only a small portion of the vein to the south of the fault has been found. The southerly part has been faulted to the west, as is shown by the occurrence of drag ore in the fault zone on the surface at a point 40 feet west of the vein. Probably the richest ore ever mined in Ontario came from this deposit: 765 pounds of ore taken from a portion of the shaft yielded $47,000 worth of gold. The character of this ore may be seen reproduced in natural colours in the frontispiece of the Twenty-sixth Annual Report of the Ontario Bureau of Mines. Considerable pyrite occurs in parts of the deposit, and fine, needle-like crystals of arsenopyrite often accompany the gold. During the early development a small quantity of ore was treated in the mill on the Gold Pyramid, a mile distant. The disastrous fire of July 29th, 1916, which resulted in a large loss of human lives, destroyed all the buildings in the area and retarded development considerably. New camps were erected, and early in 1917 a 50-ton Hardinge ball mill with amalgamation plates was built.

Development work[1] consists of a 400-foot inclined shaft with the following drifting and cross-cutting: On the 150-foot level 465 feet of drifting; on the 200-foot level, drifting and cross-cutting 208 feet, raising 25 feet; on the 250-foot level, drifting 110 feet, cross-cutting 109 feet, raising 60 feet; on the 300-foot level, drifting and cross-cutting 700 feet, raising 45 feet; on the 400-foot level 100 feet of drifting and cross-cutting.

Quinn.—In the spring of 1918 Neh Falkenham discovered a gold-quartz vein in the greenstones to the south of the sediments on the Quinn veteran lot, north half lot 1, concession IV, Hislop township. He and Alvin Peter optioned the claim and sank an 85-foot shaft on the vein which showed considerable gold in places. The vein, which is from one foot to a few inches in width, dips 85° to the south and strikes east and west for 300 feet where it disappears under drift. Parallel quartz veinlets occur on the hanging-wall side of the vein, while the contact between the vein and the footwall is rather sharp, due to some movement. An enriched streak up to 6 inches in width occurs usually near the faulted, or foot-wall, part of the vein. This richer portion contains much copper pyrites, pyrrhotite, galena, pyrite and some gold in the flour state. On analysis, one or two ounces of silver may also be obtained.

The rocks on the claim comprise alternating flows of basalt largely altered to carbonate and rhyolite, which have been tilted into a vertical position. Only the more basic rocks show the ellipsoidal or flow structures. The acid rocks, rhyolite or porphyry, in which the veins are located, consist largely of white quartz phenocrysts in a fine-grained groundmass of calcite, quartz with some chlorite, and altered feldspars.

Painkiller Lake

Painkiller lake lies 10 miles by wagon road to the northeast of Matheson. Gold was first found in 1907 and 1908, but only desultory mining has been

[1] Ont. Bur. Mines Report, Vol. XXVI, 1917, p. 94; Vol. XXVII, 1918, p. 100.

carried on. Shafts have been sunk 100 feet and mills built, but less than $1,000 in gold has been produced. Interest in the area has been revived at times by the finding of the large gold deposits in Porcupine, 45 miles to the southwest in 1909, and the extremely high-grade ore on the Croesus, 6 miles to the southeast in 1915. The most recent developments have been on the Hill and the Hattie.

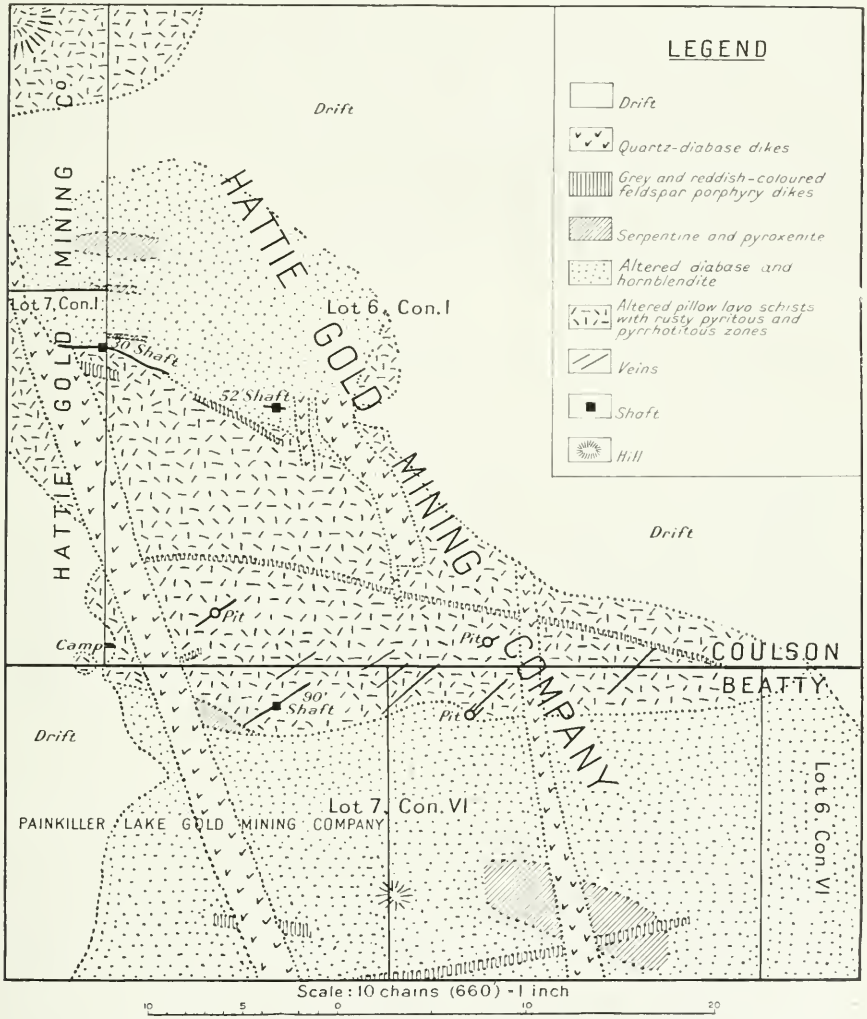

Fig. 42a—Geological sketch map showing properties of the Hattie and Painkiller Lake gold mining companies, townships of Coulson and Beatty.

The mineral veins occur in altered pillow lavas intruded by narrow porphyry dikes; the latter may bear some relation to the origin of the deposits. The numerous, narrow, gold-telluride-quartz veins in the area are practically all parallel and remarkably uniform in direction, northeast and southwest, thus resembling somewhat the parallel veins at Kalgoorlie, but differing from the radial system of fissuring at Cripple Creek, Colorado. They are somewhat of the lode-

formation type, but the veins, which are usually about one inch in width, are not always closely spaced, and the intervening area contains few or no cross-fissures. The minerals are gold, tellurides, pyrite, chalcopyrite, pyrrhotite, galena, zinc blende, quartz, chlorite, sericite and calcite. Large east and west veins of mispickel, pyrite, and quartz carrying low values in gold, silver and copper represent another type of vein.

Cartwright.—The Cartwright Goldfields, Limited, have their main working on the south shore of Painkiller lake on lot 8, concession V, Beatty township. A small quartz vein carrying visible gold, telluride and pyrite strikes southwest from the lake shore under a hill of drift. A 100-foot shaft has been sunk on the hill on the supposed extension of this vein. The shaft was full of water at the time of inspection; however, the dump is composed almost entirely of rock with little vein material. A fire in 1913 destroyed the surface plant, and in 1916 the new buildings and material for a 10-stamp mill were also burned, since which time no work has been done.

Dunlop.—Immediately west of the Cartwright is the Dunlop location. On the east central part of the claim a 20-foot pit has been sunk on an east-west vein of quartz, mispickel and pyrite. At the shaft the vein is 7 feet wide and carries a little gold. Low values in gold also occur in a rusty pyritous and pyrrhotitous greenstone intersected by quartz and calcite stringers on the portion of the claim which projects as a small point into Painkiller lake.

Hattie.—The Hattie Gold Mines comprise several claims in Coulson and Beatty townships. Work has been largely confined to the south half of lot 6, in the first concession of Coulson, and an adjoining part of Beatty township. Development work consists of trenches, test pits and two shafts, the latter being about 40 and 50 feet deep respectively. The veins are in rusty, altered, pillow lava, which has been intruded by hornblendite, peridotite, and serpentine. These peridotite rocks are cut by feldspar porphyry which has in turn been intruded by quartz diabase, as shown on the map. Occurring in the pillow lavas are several pyritous and pyrrhotitous zones, samples from which gave on analysis, nickel, none; platinum, none; and gold, 80 cents. The gold-bearing quartz veins on the property are quite numerous but usually narrow. Most of them are one inch in width and a few hundred feet in length. They strike northeast and southwest and dip from 80° northwest to 80° southeast. The veins contain appreciable amounts of gold and bismuth tellurides, but they are usually too narrow to mine separately at a profit; nor are they often closely spaced, and the intervening parts usually lack in cross-fissures. However, at one point, viz., in the northwest corner of lot 6, concession VI, Beatty township, there are a number of parallel auriferous quartz stringers fairly closely spaced, which may carry milling values over mining widths. At another point, namely, about 350 feet northeast of the Hattie camp, the veins are larger, being a foot or more across, with minute veinlets carrying gold and telluride in the intervening altered rock, the latter being impregnated with much pyrrhotite, pyrite and copper pyrites. At this point high values in gold were reported to have been obtained across several

feet. The tellurides are largely those of bismuth, none of the precious tellurides having been identified.

A quartz vein striking nearly at right angles to the general strike of the veins occurs farther north along the contact between the pillow lava and rocks of the hornblendite-serpentine group. This contact vein which carries gold and telluride averages about six inches in width, and is traceable for 400 feet. A 35-foot shaft has been sunk on the vein, but was full of water at the time of inspection. To the east an inclined shaft has been sunk 50 feet on what may be a continuation of the contact vein. This vein dips 60° to the north, is a few feet in width and carries considerable pyrite and some bismuthinite. J. Papassimakes is president of the company, and E. G. Mayot in charge of the prospecting work.

Hill.—The principal workings of the Hill Gold Mining Company are on the northwest quarter of the north half of lot 11, concession V, Beatty township. Gold was found on the claim in 1915 by a prospector, W. H. G. Parsons, who

Fig. 43—Buildings of the Hill Gold Mining Company, Beatty township, September, 1918.

was burned in the forest fire during the following year. The vein, which is near the northwestern corner of the claim, is composed of quartz and calcite, and varies from a foot to a few inches in width. It strikes northeast and southwest and dips almost vertically. The dip is 80° to the north in the upper 60 feet of the shaft, while in the next 30 feet it is vertical. On the 90-foot level drifts have been run 110 feet to the northeast and 70 feet to the southwest. Pyrite, mispickel and zinc blende are well distributed in the vein. Tellurides are present, and gold can be seen in an outcropping to the northeast of the shaft. The country rock is pillow lava which has been intruded on the adjoining claim to the north by a few narrow porphyry dikes as shown on the map. During the first half of 1918 about 25 men were employed in mining and putting up buildings. A 50-ton Hardinge ball mill was built and a trial sample put through which yielded gold valued at $635. E. H. Williams was in charge of operations. Work was suspended in the fall of 1918, but it is the intention to commence mining again in the near future.

Mayot or Treadwell.—The Mayot or Treadwell claims are the two southern claims in lot 9, concession VI, Beatty township. The veins are quite similar in every way to those on the Hattie, save that they pass from amygdaloidal and ellipsoidal basalt into diabase. No. 2 vein averages from 3 inches to one-half an inch in width, having an occasional branching stringer, and is traceable over a distance of 350 feet. The vein contains much visible gold, tellurides, pyrite and

Fig. 44—Narrow quartz vein carrying bismuth tellurides and gold on Mayot claim; looking northeast across Painkiller lake towards the Hattie mine.

pyrrhotite, and resembles the No. 2 vein of the Tough-Oakes mine, Kirkland lake. There is a 20-foot pit on the northeast end of the vein, the wall rock being a silicified amygdaloidal basalt. To the southeast there are several similar parallel veins which have been exposed by trenching. The wall rocks are extremely hard and tough. No. 1 vein, which is about 4 feet wide at the 32-foot shaft, runs approximately east and west. It consists of a mixture of mispickel

and pyrite, with a little copper pyrites and quartz, and carries some values in gold. A pit has also been sunk on a quartz-calcite vein carrying a little disseminated galena and sphalerite, a sample of which gave on analysis gold, 40 cents; silver, none.

McMaster.—The McMaster claims in lot 9, concession V, Beatty township, lie adjacent to the Treadwell on the south. Some of the veins on the latter extend into the McMaster. Two feldspar porphyry dikes occur on the claim. No work has been done other than trenching and a few test pits.

Painkiller.—The Painkiller Lake Gold Mining Company own the northwest claim in lot 7, concession VI, Beatty township. Extending across the northern part of the claim is a fringe of altered pillow lava rocks, about 150 feet wide, which contains a few gold-bearing quartz stringers, extensions of the veins from the Hattie. The veins are similar to those on the Hattie, and carry gold and tellurides. On one of these stringers a shaft has been sunk 94 feet, but the vein was reported to have disappeared from the shaft at a depth of about 35 feet. Veins have not been found in the hornblendite, serpentine, porphyry and diabase which occupy the greater part of the claim.

Rickard Township

Gold was found in Rickard township in July, 1917, on the Raty claim. Enough underground work was done in the following year to show the ore to be only a small pocket in a large, well mineralized quartz vein. No other gold deposits have been found in the township, which is difficult to prospect owing to the heavy overburden of drift; approximately 97 per cent. of the surface of the township is drift-covered. The depth of these superficial deposits may be judged from the log of a diamond drill hole on the Raty claim which showed 100 feet of drift overlying rock, the hole having been commenced at a point only 25 feet from the outcropping rock.

Raty Claim.—The occurrence of gold on the Raty claim, the southwest quarter of the south half of lot 7, concession IV, Rickard township, has been previously described;[1] hence only a few additional notes will be given. The rocks are pre-Cambrian, consisting of Keewatin volcanics (altered basalts and diabases) with subordinate amounts of banded chert, or iron formation, all of which are intruded by feldspar-porphyry and later by quartz-diabase dikes. The Mining Corporation of Canada, which optioned the property, built camps, installed a steam plant and did considerable underground mining and diamond-drilling. Approximately $110,000 was spent on the property. The late Geo. O. Randolph was in charge of operations, employing at times 50 men. In July, 1918, work was suspended and the claim reverted to the original owners.

Development work consists of approximately 2,000 feet of diamond-drilling, a 100-foot shaft inclined at an angle of 85° to the south, and about 700 feet of drifting and cross-cutting at the 100-foot level. Work has been done on two quartz veins from two to six feet wide, striking nearly east and west astronomically

[1] Report, Ont. Bur. Mines, Vol. XXVII, 1918, pp. 212-214.

and dipping 85° to the south. The veins were found to unite underground at a point a short distance west of the shaft.

In shaft-sinking spectacular ore was encountered between the depths of 5 and 14 feet; the next 25 feet contained milling values, below which gold practically disappeared. The diamond-drill cores showed the veins to be quite extensive, but the values were disappointingly low. The pocket of high-grade ore contained much coarse gold accompanied by bismuth telluride, a lead telluride (?) and other minerals in crushed quartz. Assays showed considerable silver. A sample of the high-grade ore, reproduced in natural colours, may be seen in the Canadian Mining Journal.[1] Sulphides are prominent in all parts of the veins, and they occur usually along dark parallel seams. Pyrite is the common mineral, but copper pyrites, galena and molybdenite are abundant also. Molybdic oxide and native copper are secondary minerals near the surface. Calcite, sericite, chlorite and talc occur usually in seams running through the quartz. For a distance of

Fig. 45—Compressor building and shaft house, Raty claim, Rickard township.

5 to 10 feet from the vein the wall rocks, which were originally pillow lava and diabase, have been altered to a grey or pinkish carbonate rock. Under the microscope the wall rocks are seen to have been replaced largely by calcite and dolomite (?) and partly by quartz, chlorite, sericite and pyrite. Occasionally the faint outline of a feldspar crystal can be recognized. The altered wall rocks are not known to contain any gold values.

Miscellaneous Gold Prospects

In addition to the deposits already described gold has been discovered in other parts of the area. On the O'Neil-Potter claims along the Shallow river in the southeast part of Coulson township low gold assays have been obtained from a quartzite schist which contains much pyrite and thin seams of graphite.

On the Black river at Matheson and about one mile above the town on the

[1] Issue of February 15th, 1918, p. 57.

same river there are narrow quartz veins carrying low values in gold. The rocks are pillow lavas which have been intruded by porphyry.

In the north part of lot 2, concession VI, Carr township, a 6-foot pit has been sunk on a rusty carbonate containing numerous quartz veins. A sample taken from the pit, consisting of quartz, calcite, pyrite and mispickel, yielded on assay $2.40 of gold to the ton.

Messrs. Critchie and Taylor did considerable prospecting in the southwest part of Wilkie township, where a group of rocks not unfavourable for gold-prospecting have been exposed by the Shallow river cutting through the heavy overburden of clay. The rocks comprise pillow lava, dacite and quartzite, which have been intruded by quartz-porphyry, and finally by diabase. No visible gold has been found, but fair assay values are reported to have been obtained. The writer took a sample, however, from a well mineralized deposit consisting of rusty porphyry schist, quartz and calcite with galena, sphalerite, pyrite and pyrrhotite which was found to contain no gold or silver.

Some prospecting was carried on a few years ago in the southern part of Bowman township, particularly on lots 2, 6, 7 and 8 of concession II. The rocks are hornblende schist and pillow lava intruded by stocks of gabbro and dikes of porphyry, granite, and diabase. On the Turcott claim, southeast quarter of south half of lot 6, concession II, and in the immediate vicinity, there are several narrow veins usually widely spaced, some of which will yield low assay values in gold. Near the south part of lot 2, concession II, on the Campbell-Moore claim, is a vein from one foot to four feet wide, striking east and west and dipping 60° north, which contains low values in gold.

The Silver Foam Mining Company sank a 60-foot incline shaft and a 60-foot vertical shaft on small quartz veins in pillow lava on lot 10, concession II, Walker township, near Monteith. Grab samples from the dumps yielded no gold.

In lots 8 and 9, concessions V and VI, Calvert township, there are numerous narrow quartz veins which carry low values in gold. These occur in pillow lava which is intruded by narrow porphyry dikes. A 4-inch vein of prehnite was identified from this locality.

Messrs. R. S. Potter and G. W. Quinn own the south half of lot 13, concession III, Hislop township. On this lot a pit has been sunk on a quartz vein which contains visible gold.

A one-inch calcite veinlet containing a little zinc blende from Mistogo falls yielded an assay one-half oz. of silver to the ton.

Nickel

Alexo.—The Alexo Mining Company, under the management of William Anderson, is operating a nickeliferous pyrrhotite deposit on lot 1, concession III, Clergue township, extending into lot 12 in the third concession of Dundonald township. Since 1912 ore has been shipped continuously to the Mond Nickel Company's smelter at Coniston, the production to the end of 1918 being 49,132 tons, averaging approximately 4.5 per cent. of nickel and .5 per cent. of copper. An assay made by Ledoux and Company on a parcel of between 5,000 and 6,000 tons shipped in 1915, showed 0.03 oz. of platinum and palladium per ton of ore.

The pyrrhotite occurs as lenses from 3 to 40 feet wide in a serpentine-andesite contact. The deposits have been described in detail by A. P. Coleman,[1] W. L. Uglow,[2] M. B. Baker,[3] and in the report of the Royal Ontario Nickel Commission.[4] The present workings are at a depth of 350 feet.

Other Nickel Occurrences.—Some disseminated and massive nickeliferous pyrrhotite has been found to the southwest of the Alexo mine, along similar contacts, on the Troop, Chisholm, O'Connor and Mond Nickel Company's claims.

M. B. Baker also refers to a similar occurrence in lot 7, concession V, McCart township, belonging to D. O'Connor and J. A. McAndrew.

Alex. Kelso[5] stated that low-grade nickel ore has been known for some time at South bay, Night Hawk lake, in Carman and Langmuir townships.

A pyrrhotite vein, three feet wide, in lot 5, concession VI, Beatty township, contains traces of nickel and 40 cents of gold to the ton.

In lot 12, concession III, Munro township, Chas. Mickle has sunk a 50-foot shaft on a massive pyrrhotite deposit 5 feet wide, a sample from which yielded on assay, nickel 1 per cent.; gold, none; platinum, none. Like most deposits, it occurs at the contact of a pillow lava and altered diabase or serpentine.

Near the centre of lot 5, concession V, of the same township, Messrs. Burk and R. Reid own a deposit which is said to carry appreciable amounts of nickel and copper.

At the north end of Garrison township a little over an eighth of a mile south of the southwest corner of Rand township and at the north edge of a great swamp, there is a dike of serpentine rock which was tested for nickel and platinum. A qualitative analysis showed the serpentine to contain a trace of nickel and no platinum. At the southwest corner of Rand township there is a precipitous hill of grey, acidic lava which is at times amygdaloidal. On some faces of this steep hill the rock is rusty, the rusty material evidently weathering from pyrrhotite. A few fresh specks of the pyrrhotite were found and submitted to a qualitative test for nickel, which showed that the pyrrhotite carried no nickel. On the south and north sides of this hill there are dikes of serpentine rock.

Chromite

Serpentine rock containing chromium was first found on Lower Lake Abitibi in 1873 by Walter McOuat.[6] Later M. B. Baker, in 1908, found a serpentine rock containing chromium about the middle of the east shore of Northeast bay in Lower Lake Abitibi, just south of point 16 A. The chromium contents of this rock, however, are too small to be of economic importance at the present time.[7]

William Campbell of Low Bush sent to the Bureau of Mines in 1918 a

[1] Ont. Bur. Mines, Vol. XVIII, 1909. Pt. I, pp. 23-24; Econ. Geol., Vol. V, 1910, pp. 373-376; Dept. of Mines, Can., "The Nickel Industry," 1913, p. 112.

[2] Ont. Bur. Mines, Vol. XX, 1911, Pt. II, pp. 34-38; Journal Can. Min. Inst., Vol. XIV, 1911, pp. 657-677.

[3] Ont. Bur. Mines, Vol. XXVI, 1917, pp. 258-274.

[4] Royal Ont. Nickel Commission Report, 1917, pp. 228-232.

[5] P. 23, Appendix, Report of Royal Ontario Nickel Commission, 1917.

[6] Geol. Sur. Can., 1872-3.

[7] Ont. Bur. Mines, Vol. XVIII, 1909, pp. 273-5; Vol. XXVII, 1918, pp. 205-6.

sample of serpentine from point "1A" on Lower Lake Abitibi which is about four miles southeast of the outlet of the lake. The sample was found to contain 0.82 per cent. Cr_2O_3, no platinum and no nickel.

The serpentine at Lightning mountain in the south part of Frecheville township was tested for chromium and platinum, the tests giving negative results. The occurrence of serpentine on Lightning mountain is more fully described on page 66.

The occurrences of chromite in Beaume and Dundonald townships are referred to in the Twenty-seventh report of the Ontario Bureau of Mines on pages 206-208.

Several samples of serpentine from various parts of Mann township were found to contain no nickel or platinum.

Fig. 46—Veinlets of asbestos in serpentine, lot 6, concession 1, Warden township.

Iron Pyrites

Iron pyrites has not been shipped from the area; however, there are two or three prospects which may be mentioned.

William Campbell of Low Bush P. O., Ont., is interested in a deposit of iron pyrites on the shore of Lower Lake Abitibi on lot 4, concession C, Steele township. On the shore there is much gossan and considerable pyrite disseminated through a graphitic schist. Mr. Campbell states that under the water the pyrites is practically pure over a width of eight feet. This was not seen owing to the water in Abitibi lake having been raised nine feet by the building of a temporary dam at Couchiching falls.

In 1916 Dan O'Connor discovered an interesting and somewhat unique deposit of iron pyrites on lot 7, concession V, McCart township. This is described by M. B. Baker [1] as follows:—

[1] Ont. Bur. Mines Report, Vol. XXVI., 1917, p. 272.

Scattered through the ash-rock or tuff are small round ball-like concretions of iron pyrites. They vary in size from that of peas, to balls two inches in diameter. In places there is a layer six feet or more in thickness, where these ball-like concretions are so packed together as to be almost touching each other. It is the writer's belief that below water level this pyrites would tend to become massive, and if so, would form a possible source of the sulphide for the extraction of sulphur dioxide, so much needed in the wood pulp industry of northern Ontario.

D. O'Connor and J. A. McAndrew tested the deposit at depth by diamond-drilling, but found the pyrite to be disseminated through the rock and not massive over mining widths.

Asbestos

Asbestos occurs as minute veinlets in many serpentine outcrops in the map-area, but no economic deposits have been discovered as yet. Asbestos, however, was shipped in 1916-17 from the Slade-Forbes claim, H.R. 368, Deloro township, which lies only 6 miles west of the map-area. Portions of this serpentine carry 12 per cent. of asbestos veins and much of the fibre is two inches in length and of good quality.[1] Prospecting some of these serpentine areas for asbestos might meet with success. One of the most favourable showings is on lot 8, of the fourth concession of McCool township, where there is fibre one inch in length. Another interesting occurrence is on lot 8 of the second concession of Munro township, where there is a network of asbestos veins, much of the fibre being over half an inch in length. Numerous minute veinlets of asbestos were seen in the serpentine on the line between lots 6 and 7, concession I, Warden township. The asbestos stringers, some of which are half an inch in width, occupy a large portion of the rock covering an area of 50 feet by 300 feet. A few asbestos seams rich in magnetite occur in the serpentine near the middle of concession II, between lots 6 and 7, Munro township.

Unusual Magnetic Declination in Frecheville and Rand

Along the south boundary of Frecheville township the compass was found to have an unusual variation at and near the contact of an intrusion of serpentine which cuts Keewatin lava. The Keewatin here forms a prominent hill known as Lightning mountain, about two miles east of the southwest corner of Frecheville township. At the foot of Lightning mountain, on the southwest side, the mass of serpentine referred to strikes about west 30° north. The greatest variation, which is 95° west of the true astronomic north, occurs at about the contact of the serpentine and Keewatin, Fig. 47. It is evident that the variation is due to the serpentine rock, since it falls as one leaves the contact, Fig. 47. The only apparent cause for this unusual declination appears to be the presence of a very little magnetic in the serpentine. Analyses of the serpentine for platinum, chromium or nickel gave negative results.

There was also found a heavy magnetic declination along the south boundary of Rand township in a swamp. The declination is as high as 36° west of north astronomic. The south boundary of this township being drift-covered, it was not

[1] Ont. Bur. Mines Report, Vol. XXVI., 1917, pp. 108, 273-4.

possible to discover the cause of the declination. However, there is an iron formation about a mile south of the boundary. If this extends north, below the drift, it probably would account for the variation of the compass.

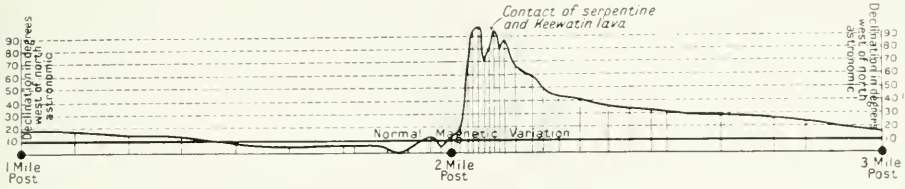

Fig. 47—Curve showing unusual magnetic declination at and near the contact of serpentine rock and Keewatin lava, at the second mile post on the north boundary of Holloway township south of Upper Lake Abitibi. Proceeding east along the serpentine rock the declination suddenly rises to 98° about the contact of serpentine and Keewatin. On leaving the serpentine and entering the Keewatin, the declination very gradually falls to normal proceeding east away from the contact.

Sand, Gravel and Clay

Much of the sand and gravel of the area has been of value for railway ballast, road dressing and construction purposes. Enormous quantities of gravel were taken from the Nellie Lake pits to build the railway across the swampy flats to the north. Gravel has been loaded into scows at the mouth of the Shallow river

Fig. 48—Morainic hills at Nellie Lake, with a kettle lake in the foreground.

and taken down stream for the construction of the dam at Iroquois falls. The same has been done where the morainic ridge crosses the Abitibi river in Teefy township for the dam at Twin falls. Wherever convenient, gravel is used on wagon roads.

Clays suitable for brick-making are plentiful.

Waterpowers and Hydro-Electric Plants

J. G. McMillan in his report[1] on "Explorations in Abitibi" describes the various waterpowers of the region. What Mr. McMillan asserts is the most easily developed waterpower, viz., High falls on the Frederick House river, Mann township, with a drop of 46 feet, has been destroyed, as described elsewhere on page 42. The river has worn back three miles and formed a 10-foot falls from which a small power could be developed. Five miles below the old 'High falls' is a drop of about 30 feet in a distance of three-quarters of a mile which could be utilized for power purposes by constructing a dam about 200 feet in length near the foot of the rapids.

Iroquois falls, on the Abitibi river, in the fourth concession of Teefy township, has been developed by the Abitibi Power and Paper Company. Approxi-

Fig. 49—A residential portion of Iroquois Falls, 1918.

mately 19,000 horse-power is utilized by the company to operate its plants and to light the town of Iroquois falls. The head varies from 42 to 45 feet, and the drainage area is 5,278 square miles.

This company is also developing Twin falls, 4½ miles east of Iroquois falls on Abitibi river. The power-house will have four units operating under a head of 55 feet and using 4,500 cubic feet of water per second. This dam will maintain the river above at the level of Abitibi lake, thus drowning out various rapids and also the 45-foot drop at Couchiching. The area along the river which will be flooded is shown on the map by solid lines. Construction work at Twin falls was suspended temporarily in 1917, the foundations of the dam being well under way at the time. When the plant is complete power will be sold for various purposes.

The Ontario Hydro-Electric Power Commission has developed a small power on the Driftwood river at Monteith for the purpose of lighting this town. The town of Cochrane is lighted by electricity furnished by producer gas engines.

[1] Fourteenth Report, Ont. Bur. Mines, Vol. XIV, 1905, Pt. I, p. 208.

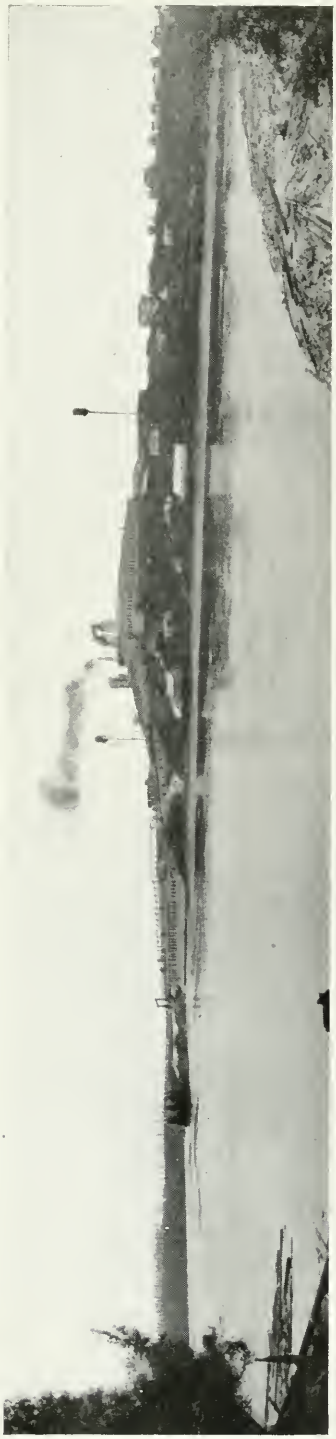

Fig. 50—Abitibi Power and Paper Company's plant at Iroquois Falls, 1918.

Pulp and Paper Mills

The Abitibi Power and Paper Company, Limited, is operating at Iroquois falls one of the largest pulp and paper mills in Canada. During parts of 1918 about 15 cars of paper were shipped daily. Power is supplied by the company's hydro-electric plant at Iroquois falls. Additional power, as already mentioned. is being developed 4½ miles east at Twin falls.

The timber limit, which comprises 1,560 square miles, is ideally situated, being well traversed by navigable waters and two lines of railway.

In the manufacture of sulphite pulp elemental sulphur is imported from Louisiana, the daily consumption being about 2,650 pounds; the limestone comes from Haileybury.

If the pulp and paper industries in Ontario would exchange native sulphur for pyrite, the iron pyrites industry would be benefited.

Bibliography

The area included in the map, accompanying this report, has been frequently referred to by geologists and explorers who have at various times made detailed examinations of small areas or exploratory trips through parts of the region. This is particularly true of the westerly part. where repeated references are made to the country in the vicinity of the Abitibi river and its tributaries, the Black and Frederick House rivers. There are also a few such references to the geological and other features of the country directly around Abitibi lake. Otherwise little was known regarding other parts of the region. In the following list of reports additional information relative to this area may be obtained.

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LARDER LAKE GOLD AREA

By P. E. Hopkins

Introduction

During the first week in October 1918 the writer examined the working properties at Larder Lake. A brief history and geological summary of the camp will be given prior to describing the working properties, the hydro-electric development, and a pyrite deposit which was discovered by the writer in Hearst township. The properties mentioned in the report are shown on the accompanying map, Fig. 1. Many thanks are due C. G. Dampreé and members of the Larder Combined company for courtesies extended to the writer. The drawing accompanying the report was made by W. J. Bell of the Bureau of Mines.

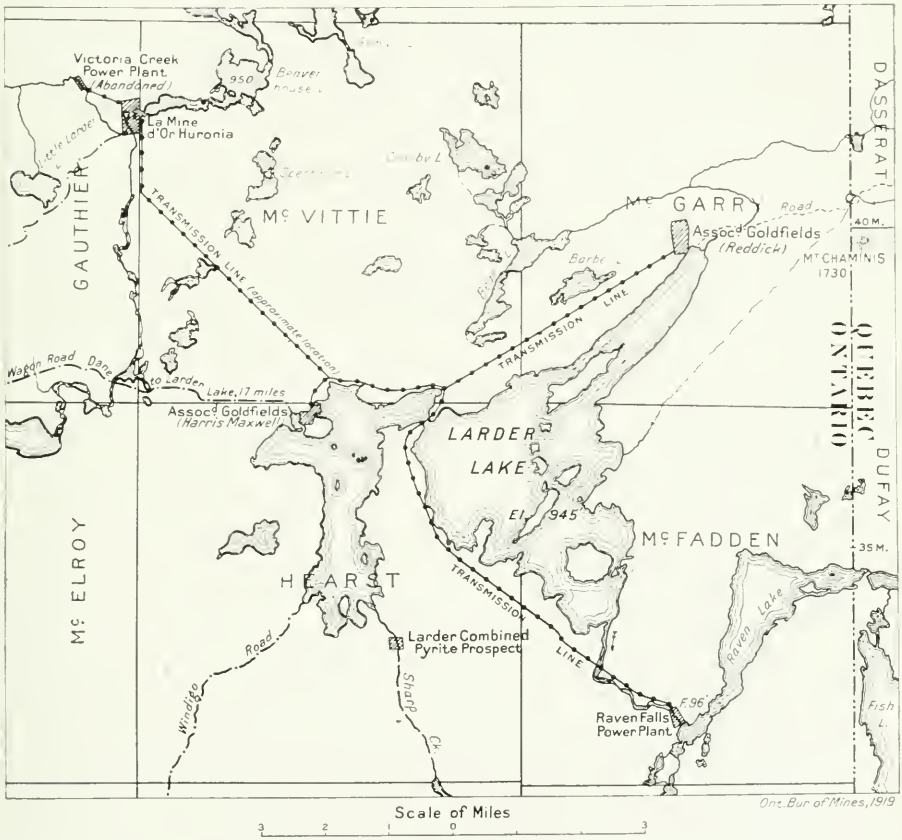

Fig. 1—Sketch map of the Larder Lake Mineral Area, showing locations of transmission lines, power plants and certain mining properties.

Location and History

Larder lake is situated 50 miles due north of the Cobalt silver area, near the Ontario-Quebec boundary. It is connected by a wagon road 17 miles in length to Dane station, which is at mileage 160 on the Timiskaming and Northern Ontario railway. The road is used by automobiles in the dry summer weather.

The finding of gold at Larder lake in August, 1906, by Dr. Reddick, caused a rush of prospectors to the area during the following winter of 1906-07, when a few thousand claims were staked. In June, 1907, the Larder Lake Mining Division was formed and J. A. Hough appointed Mining Recorder at Larder City. Development and prospecting following the "winter stakings" resulted in much disappointment, as is often the case, and hence most prospectors left the area, and the recording office was moved to Matheson in March, 1911. Desultory mining has been carried out at two or three properties since. The total gold production is in the neighbourhood of $20,000, coming from the Associated Goldfields (Harris-Maxwell), Mine d'Or Huronia and Reddick. The writer did not have access to assay plans or do any extensive sampling. However, from what was learned there are parts of the area in which recent development work has made certain properties more promising.

Literature

In 1901 Dr. W. G. Miller,[1] Provincial Geologist of Ontario, passed through Larder lake, then called Lake Present. In 1903 Dr. W. A. Parks,[2] of Toronto University, described the geology along the chief waterways of the area. In June, 1907, R. W. Brock,[3] who afterwards became Director of the Geological Survey of Canada, examined and reported on an area in the vicinity of Larder lake for the Ontario Bureau of Mines, his report being accompanied by a geological sketch map. His assistant, N. L. Bowen,[4] continued geological work during the remainder of the summer and published a more detailed map and a brief report. M. E. Wilson,[5] spent 1908 and 1909 in the area, and has published the most detailed maps and reports on the area. During 1912 and 1913 A. G. Burrows and P. E. Hopkins examined from the Kirkland Lake and Swastika gold areas eastwardly to La Mine d'Or Huronia.[6] In September, 1916, A. G. Burrows[7] examined La Mine d'Or Huronia and a part of Gauthier township.

Geology

The geology of Larder Lake is similar to the pre-Cambrian in many other parts of Ontario. The oldest rocks are dominantly volcanics, comprising greenstones and green schists. Associated with them are bands of ferruginous carbonate, iron-formation, slate, and conglomerate, which strike nearly east and west, and dip vertically. The sediments have their greatest development along the north shore of Larder lake, portions of which are traceable westerly to Kirkland lake. The rusty-weathering carbonate at Larder lake is intersected by quartz and

[1] Lake Temiskaming to the Height of Land, by W. G. Miller, Ont., Bur. of Mines Report, 1902, pp. 214-230.

[2] The Geology of a District from Lake Temiskaming northward, by W. A. Parks, Summary Rep. G.S.C., 1904, pp. 198-225.

[3] The Larder Lake District, by R. W. Brock, Ont. Bur. of Mines Report, 1907, pp. 202-220.

[4] Ont. Bur. of Mines Report, 1908, pp. 10-11.

[5] Larder Lake and Eastward, by M. E. Wilson, Summary Report, Can. Geol. Surv., 1909, pp. 173-179. Geology and Economic Resources of Larder Lake, by M. E. Wilson, Memoir No. 17-E., Can. Geol. Surv. 1912.

[6] Kirkland Lake and Swastika Gold Areas, Ont. Bur. of Mines Report, 1914, Pt. 2.

[7] Gold in Gauthier township, by A. G. Burrows, Ont. Bur. of Mines Report, 1917, pp. 252-257.

calcite stringers which carry most of the gold in that area, and will be mentioned later in greater detail. Cutting the above rocks are dikes of porphyry and aplite, presumably from the large granite batholith to the southeast. Lying on the above rocks are erosion remnants of conglomerate, greywacké and arkose of the Cobalt series. The diabase and gabbro dikes represent the latest igneous activity and are the youngest rocks of the area.

Rusty-weathering Carbonate (Gold-bearing Formation).—Rusty carbonate rocks are found in or near many of the gold areas of northern Ontario. This type of material has been prospected to a considerable extent in various parts of Ontario without yielding any producing gold mines. These rocks are more widely distributed in Larder Lake than elsewhere, and are important since they appear to contain a greater quantity of gold than the other rocks of the area. Gold, however, does occur in the aplite on the Gold King and in the porphyry and green schists of La Mine d'Or Huronia. It is believed that the gold is related to these aplite-porphyry intrusions and, therefore, indirectly to granite. The rusty-weathering carbonates are in places dolomites which occur in bands up to 300 or more feet in width. They are usually brown in colour, but often large parts of them have been altered to green fuchsite or mariposite, serpentine and talc. They are intersected by a network of quartz and calcite stringers which carry low assays in gold over considerable widths and frequently contain small ore shoots or spectacular gold showings. Although this association of rocks and mineral solutions is not known to form ore in many parts of the world, still there is a resemblance to the ore bodies on the Rawhide mine, southeast of Angels Camp, California. Small, medium-grade ore shoots do occur, as on the 83-foot level of the Reddick and 500-foot level of Harris-Maxwell, but they are isolated, with little to indicate where they will be found, and what will be their extent. The passing from ore into material altogether or nearly barren is indicated only by the disappearance of visible gold and by low assays, not by any change in character of the deposit. Since the known richer shoots are small and scattered, the success of mining will depend upon the working of extremely large bodies of low-grade ore, which will necessitate much capital and very detailed mining. Electric power being available, a careful systematic surface sampling can be made of large areas of mineralized dolomite at a reasonably small cost, with the view of locating low grade ore over considerable width.

Associated Goldfields

The Associated Goldfields Mining Company, Limited, is operating Block "B" and Block "D," formerly known as the Harris-Maxwell and Reddick mines respectively. Power is supplied from the company's own hydro-electric plant at Raven falls, all three properties having telephone connection. The officers of the company are as follows: Geo. A. Mackay, president, C. G. Dampreé, general superintendent, and D. A. Anderson, electrical engineer.

Raven Falls Hydro-Electric Power Plant.—The power station is situated on Raven lake, at the entrance of Raven river. Larder lake serves as a storage basin.

The water is led through a flume 6 feet in diameter and 1,280 feet long, and the turbines operate under a head of 96 feet. According to A. R. Webster, Mining Inspector for Ontario Bureau of Mines, two horizontal turbines of 800 h.p. each run two 700-k.w. generators. The voltage is stepped up from 2,400 to 13,200 through three transformers of 300 k.w. each. Power is then transmitted 7¾ miles to "the Narrows" on Larder lake, where the line divides, one branch going 4½ miles northeasterly to the Reddick, and the other 2½ miles westerly to the Harris-Maxwell and an additional 5½ miles northwesterly to La Mine d'Or Huronia, making in all about 21 miles of transmission line (three phase, sixty cycle), as shown on the accompanying sketch map. At the Reddick the voltage is stepped down to 2,200 through two 150-k.w. transformers. Here a 225-h.p.

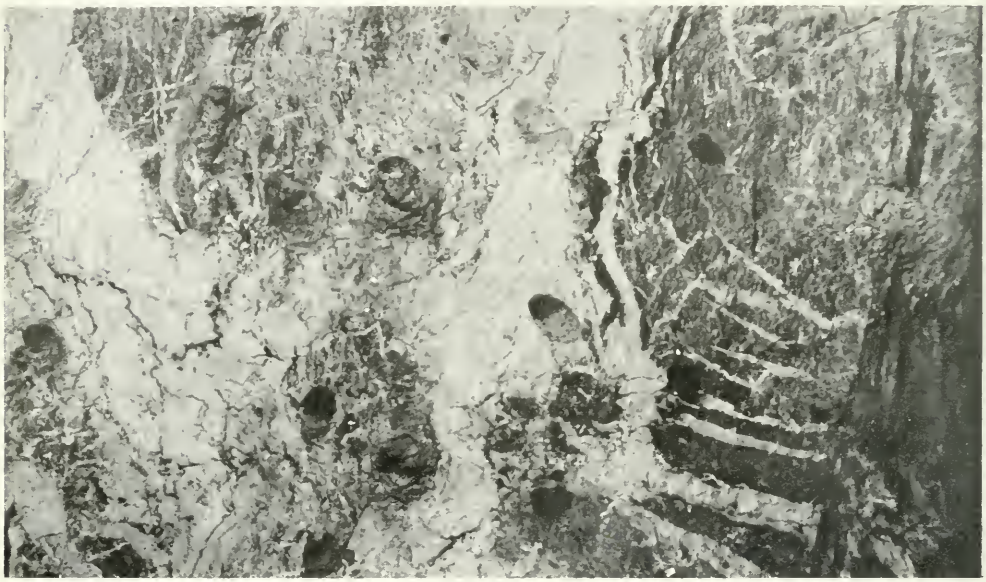

Fig. 2—Face of drive on 500-ft. level, Associated Goldfields (Harris-Maxwell) property, in ore containing visible gold.

motor drives a compressor of 2,000 cu. ft. capacity. The branch line to the Harris-Maxwell is stepped down through two 75-k.w. transformers to 550 volts. On the property there are motors for driving the various machinery units. Power was supplied for a time for the running of the mill on La Mine d'Or Huronia. The latter had a small electric plant of its own on Victoria creek, but it was closed owing to lack of storage capacity.

Block "B" Associated Goldfields (Harris-Maxwell).—This property consists of two claims, H.S. 114 and 115, on the northwest shore of Larder lake. An inclined shaft has been sunk to the 65-foot level where drifts and cross-cuts have been run, and a raise connected with the open pit. From the open pit level a vertical shaft or winze has been sunk to the 500-foot level, stations having been put in at each 100 feet in depth. On the 500-foot level about 150 feet of drifting and cross-cutting have been done. The openings are all in silicified dolomite,

with the exception of a narrow trap dike occurring in the inclined shaft or tramway to the mill. A 10-stamp mill was built in 1908, and a few trial runs made by the Harris-Maxwell and Lucky Boy Mining Companies. The last mentioned had the property under option for two months in 1909. An additional 30-stamp mill was built in 1912, and completed early in 1913, under management of E. T. Brooks, and was run by electricity supplied from the Raven Falls hydro-electric power plant, which was completed at about the same time.

Desultory mining has been going on since operations began. In the early days, according to M. E. Wilson, a shipment of 1,500 lbs. from an open cut was sent to the School of Mining, Kingston, and yielded $13.20 to the ton. A mill run of 230 tons from the same open cut made by the Lucky Boy Mining Co. in 1909 averaged only 45 cents to the ton. A mill run from another surface showing gave $2.20 per ton.

In 1913 a production was reported to the Ontario Bureau of Mines from

Fig. 3—Gold-bearing quartz stringers in dolomite (not necessarily ore). Open pit at Associated Goldfields (Harris-Maxwell), with Larder Lake to the east in the distance.

ore put through the mill from shaft sinking. To a depth of 440 feet the workings are largely in grey dolomite while below this the rock is quite green, being rich in fuchsite, and cut by quartz stringers which carry much tourmaline and pyrite, the quartz at times being a few feet in width. On the 500-foot level a drive was run into 10 feet of this material containing visible gold, some of which is quite coarse. Mr. Mackay reported that the drive was continued for an additional 20 feet in similar rich ore. The size of this ore shoot has not as yet been determined. The gold, some of which is quite pale in colour, suggesting the presence of silver, is usually accompanied with much fine galena. The plant, which is equipped with various motors, consists of a 40-stamp mill with crushers, amalgamation plates, Wilfley tables, hoists, compressor, saw mill, planing mill, and car-

penter shop. The mill is not running at present. The company is contemplating building a more suitable and larger mill. Forty men were employed on the property on October 1st.

Block "D" Associated Goldfields (Reddick).—The Dr. Reddick, the pioneer property in the area, consists of two claims, H.J.B. 29 and 30, on the northeast arm of Larder lake. The gold deposits are on the former claim and there is a 20-stamp mill, not in use, 1,000 feet distant near the lake shore on the latter claim. This is the property on which gold was first reported to have been found at Larder lake. The rocks consist of alternating bands of dolomite and green schists, of which probably the most are sediments, striking approximately east and west and dipping 70° to the north. The dolomite contains a network of quartz veins, some of which have coarse gold showings.

Development work consists of a 90-foot shaft with approximately 725 feet of lateral work on the 83-foot level, and numerous open pits. The mining plant consists of a 225-h.p. motor which drives a compressor of 2,000 cu. feet capacity and an abandoned 20-stamp mill. A run of about 100 tons from an open pit was put through the amalgamation mill in 1908 and a small production recorded. According to M. Ogilvy, then in charge, this ore carried $10 to $12 of gold to the ton. On further exploration by H. P. Depencier a drive of 350 feet long at the 83-foot level was made under the large open-cut, all of which was in material carrying little or no gold. In the summer of 1911 development work was renewed by cross-cutting at the 83-foot level in the opposite direction in the hope of ascertaining the extent of a second surface gold showing. At a distance of 62 feet from the shaft an ore body was encountered which is 20 feet wide and is said to run approximately $10 of gold per ton. A small stope was made and some ore milled by amalgamation between July and October, 1911, after which time no work was done until the Associated Goldfields bought the property in August, 1917. Since then an electric transmission line has been built, and the stope on the 83-foot level has been extended until it is approximately 250 feet long, 20 feet wide in the centre, tapering at the end, and 25 feet high (October, 1918). At that time gold could be seen in different parts of the top of the stope. The gold usually occurs in a fine-flour state with iron pyrites and some copper pyrites and native copper, along dark seams of chlorite, calcite, fuchsite and other minerals. There is no trouble in finding samples containing visible gold on many parts of the dump. Much additional development work will be done on this property.

La Mine D'Or Huronia

Gold was found in 1912 on claims L. 2586 and L. 2587, on the west shore of Beaverhouse lake, in Gauthier township. These claims were taken up by La Mine d'Or Huronia and have been worked intermittently ever since, except in 1915, when an extensive examination was made of the property by A. Paré for N. A. Timmins who had it under option; the option, however, was not exercised. A. G. Burrows describes the quartz veins as being narrow and striking northeast in a greenstone cut by quartz porphyry dikes. Gold is visible, accompanied by iron pyrites, copper pyrites, magnetite and calcite. Gold also occurs in veinlets

in the porphyry. Development work consists of numerous test pits, approximately 1,000 feet of underground work and considerable diamond drilling. The plant comprises a 15-stamp mill, a tube mill, Dorr classifier, 3 concentrating tables, 2 slime tables and a cone classifier. Power was supplied for a time by the company's hydro-electric plant on Victoria creek, 3/4 of a mile distant, but owing to scarcity of water the plant could not be operated for long. By December 10th, 1915, a transmission line was completed from the Associated Goldfields and ample power obtained. The mill ran part of 1916 but the property was closed on December 2nd of that year, and total gold production being in the neighbourhood of $9,165. Operations were again resumed at the end of 1918.

Other gold prospects worthy of mention upon which some work has been done are Gold King, Chesterville, Kerr-Addison and Larder Lake Proprietary.

The tourmaline at the Harris-Maxwell and the magnetite on La Mine d'Or Huronia suggest that the deposits were formed at a high temperature and pressure and at a great depth.

Iron Pyrites

A promising pyrite prospect occurs on claim H.S. 904 or No. 2717 on Sharp Creek, one-half mile from the southwest bay of Larder lake, in Hearst township. This is one patented claim of a group owned by the Combined Larder Mines, Ltd., in which James Hales, Barrister, Imperial Bank Building, Toronto, is interested. The claims were extensively prospected near the surface for gold several years ago, but apparently with little success.

In October, 1918, the writer while examining some of the old workings noticed that a mineral dump on the above claim, H.S. 904, consisted almost entirely of massive iron pyrites with some gossan. The shaft was full of water but the owners reported it to be 25 feet deep with a 25-foot cross-cut at that depth, the workings being in pyrite. The dump consists mainly of fine-grained massive pyrite with occasional quartz and dolomite stringers carrying a little pyrrhotite and magnetite. An eight-pound sample, which was fairly representative of the dump yielded on analysis, 43 per cent. of sulphur and 40 cents of gold to the ton. About 100 yards northwesterly from the dump with intervening drift-covered surface is a deposit of "sugary quartz" and 100 yards further along the same strike is a 30-foot shaft in a banded formation of similar quartz with much pyrite and pyrrhotite. The rocks in the vicinity are dominantly green chlorite schists and pillow lavas. The deposit is apparently worthy of further development. It lies 12 miles distant from the Timiskaming and Northern Ontario railway, and 1 1/2 miles from the Associated Goldfields hydro-electric transmission line.

Massive iron pyrites several feet wide was also seen at a 6-foot pit on Claim H.S. 913 in the southeast part of Hearst township.

End of Part II.

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ANNUAL REPORT

OF THE

Inspector of Division Courts

FOR THE

PROVINCE OF ONTARIO

FOR THE YEAR

1918

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1919

Toronto, March 5th, 1919

To His Honour Sir John Strathearn Hendrie, K.C.M.G., C.V.O., etc., a Colonel in the Militia of Canada,

Lieutenant-Governor of Ontario.

May it Please Your Honour:

The undersigned has the honour to present to Your Honour the Report of the Inspector of Division Courts of the Province of Ontario, for the year ending 31st December, 1918.

Respectfully submitted.

I. B. Lucas,

Attorney-General.

TORONTO, March 5th, 1919.

SIR,—I have the honour to submit herewith, to be presented to His Honour the Lieutenant-Governor, the Report of the Inspector of Division Courts, for the year ending 31st December, 1918.

I have the honour to be, Sir,

Your obedient servant,

J. B. MACDONALD,

Inspector.

TO THE HONOURABLE I. B. LUCAS, K.C., M.P.P.,
Attorney-General, Toronto.

Anuual Report of the

INSPECTOR OF DIVISION COURTS

For the Province of Ontario

FOR THE YEAR ENDING 31st DECEMBER, 1918

TORONTO, March 5th, 1919.

To His Honour SIR JOHN STRATHEARN HENDRIE, K.C.M.G., C.V.O., a Colonel in the Militia of Canada,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the honour to present the Annual Report of the business of the Division Courts of the Province of Ontario for the year ending 31st December, 1918, including a list of officials, a description of the limits of boundaries of the divisions in each county and district, a list of county officials, including the Judges, County Crown Attorneys and Clerks of the Peace.

Very little change has taken place in the volume of business transacted during the past year as compared with the preceding one, as shown in Table A of the Report.

Notwithstanding war conditions, the Courts throughout the Province were largely used, as appears by the amount of claims entered for suit, exclusive of transcripts of judgments, $2,009,827.98.

During the year changes have taken place in the limits of some of the divisions, notably in the Counties of Frontenac, Leeds and Grenville, and in the District of Nipissing.

At a meeting of the Division Court Board held at Kingston, the Cataraqui Court was abolished, and the territory added to the Kingston Division.

The Cataraqui Court has been of very little use, people preferring to use the Kingston Court.

At a meeting of the Board held at Brockville, the limits of the Second and Tenth Divisions of the United Counties of Leeds and Grenville were changed by detaching the 1st Concession of the Township of Edwardsburg including the Village of Cardinal, from the 10th Division—Spencerville Court, and adding it to the 2nd Division, Prescott Court.

The Board also met at North Bay, when the Fifth Division Court of the District of Nipissing, at Bonfield was abolished, and the two Townships comprising it, were added to the Third Division at North Bay.

It speaks well for the officials throughout the Province that no demands have been made upon any of the Bonding Companies on their account in connection with

the discharge of their duties, during the two and a half years that the present bonding system has been in operation.

Section 36 of the Division Courts Act as amended, under which, "The cost of all books and forms required by this Act to be kept by the Clerk and Bailiff shall be repaid to him by the Treasurer of the County, upon the certificate of the Inspector," is giving good satisfaction, and is much appreciated by the officials, and in the larger offices, means a very considerable increase in the revenue of the office.

The various offices throughout the Province, numbering three hundred and thirty-nine (339) were inspected during the year, and a careful audit of the business of each office made and filed in this Department.

Changes are constantly taking place in the personnel of the officials, and in many cases where vacancies occur, returned soldiers are appointed.

All of which is respectfully submitted.

I have the honour to be,

Your Honour's obedient servant,

J. B. MACDONALD,

Inspector.

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Algoma	1	963	32,319 20	22	1,537 17	43	851 35	28,010 40	27,778 79	231 61	928
	2	41	1,984 20	1	4 97	2	.....	1,210 40	1,143 08	67 32	36
	3	50	2,081 55	2	82 23	2	.....	971 04	935 39	35 65	47
	6	16	580 33	4	207 39	.....	3 00	577 33	580 33	.....	10
	7	150	5,945 60	5	.....	3	140 13	2,731 67	1,556 07	175 60	133
Brant	1	967	39,365 18	48	1,992 85	49	608 05	19,991 83	19,721 57	878 31	893
	2	121	3,737 96	15	803 10	1	13 00	2,622 37	2,569 23	66 15	118
	3	28	1,328 51	.....	.....	.....	.....	849 72	849 73	.....	24
	4	45	2,175 87	6	327 23	3	21 00	1,459 71	1,459 71	21 00	37
	5	17	612 78	1	77 70	1	7 30	311 17	318 17	5 00	16
Bruce	1	53	832 80	3	41 65	.....	.....	495 93	495 93	.....	52
	2	29	1,231 65	1	417 03	2	24 00	658 71	682 71	24 00	29
	3	45	1,384 74	2	24 94	.....	.....	750 21	711 39	38 82	24
	4	24	655 59	3	221 36	.....	.....	989 83	989 83	.....	20
	5	75	2,967 56	.....	.....	10	.....	1,623 92	1,623 92	.....	59
	6	Vacant	.....	.....	.....	.....	.....	.....	.....	.....	.....
	7	42	1,833 48	4	287 97	.....	.....	616 76	568 17	48 59	40
	8	125	4,700 36	8	561 93	26	33 67	2,846 37	2,786 00	60 37	119
	9	9	417 36	.....	.....	.....	28 55	192 96	221 51	.....	8
	10	15	995 73	2	91 71	1	.....	698 64	698 64	.....	16
	11	26	1,086 03	1	32 55	.....	.....	494 93	494 93	.....	17
	12	37	930 69	1	22 84	2	.....	195 63	195 63	.....	34
Carleton	1	1,823	80,889 25	37	3,344 93	402	1,659 85	20,912 12	20,392 50	2,179 47	2,081
	2	14	938 84	3	61 39	2	25 47	690 23	715 70	.....	10
	3	23	1,279 14	1	216 22	1	.....	789 90	789 90	.....	19
	4	14	626 16	4	125 09	4	.....	848 63	848 63	.....	13
	5	5	421 71	.....	.....	2	.....	193 05	163 05	30 00	3
	6	35	1,304 33	3	79 51	.....	10 25	729 08	723 35	5 73	25
	7	213	5,419 52	9	551 56	20	62 53	2,218 07	2,141 02	139 58	211
Dufferin	1	95	6,391 45	8	311 01	1	7 53	2,033 20	2,040 73	.....	78
	2	64	3,073 49	7	359 91	7	.....	1,265 17	1,265 17	.....	55
	3	3	98 50	1	52 32	.....	.....	15 00	15 00	.....	3
	4	4	218 56	.....	.....	.....	.....	218 56	218 56	.....	3
	5	19	1,313 84	4	311 56	.....	.....	902 82	830 26	72 56	15
Elgin	1	348	12,904 07	25	1,407 12	40	16 00	8,352 84	8,359 14	9 70	223
	2	12	543 10	1	114 01	4	.....	195 48	195 48	.....	12
	3	722	24,833.16	11	807 16	59	5 57	13,350 49	13,356 06	.....	687
	4	105	3,416 69	4	344 71	11	159 21	3,161 55	3,296 65	24 11	90
Essex	1	135	2,058 37	.....	.....	11	.....	2,058 37	2,058 37	.....	36
	2	65	2,731 45	8	333 30	3	.....	1,441 52	1,441 52	.....	50
	3	71	2,642 24	4	263 70	3	104 69	1,588 39	1 610 05	83 03	66
	4	93	3,616 99	2	191 30	7	.....	3,041 69	3,041 69	.....	86
	5	161	6,593 37	7	369 99	20	31 31	3,780 03	3,573 33	238 01	147
	6	24	979 40	1	81 14	1	30 00	651 19	632 44	18 75	23
	7	730	39,175 00	255	4,402 00	355	562 60	6,864 71	6,660 94	203 80	401
	8	218	11,749 52	15	867 93	29	157 12	6,729 37	6,765 86	120 63	187
	9	19	1,181 41	6	590 46	1	10 00	881 58	891 58	.....	16
	10	3	314 91	1	51 97	.....	.....	126 69	126 69	.....	2

A.

to the 31st day of December, A.D. 1918, inclusive. showing:

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of Judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of section 43 D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
35				170								3		1,958 00	900 00	
5				3										71 95		
3				9										80 45	74 82	
1				5										43 80	57 76	
10				15										286 20	142 60	
74	7	4		157				38 41	33 30	4	35 00	3		2,166 55	1,118 72	
3				24	1	12 00		3 00						310 85	225 45	
4				9	1	5 00		1 30						67 00	33 60	
4	2			4	1	11 00		1 81						119 85	75 95	
1				1	1	12 90		55						52 40		
2			1	17				1 52						111 65	83 17	
3				3				1 38						125 41	57 37	
1				11	1	15 20		1 12						121 96		
				4				48						51 95	57 37	
5				11				2 45						162 25	110 55	
2				7				1 52						98 15	77 00	
6				24				4 17		1	4 60			353 79	271 15	
1				2				40						18 12		
3				2				1 17						42 78		
3				6				1 14						57 79		
				4				63						73 70		
144			1	300				77 30	574 53	6	40 00	172	32	4,415 10	{1,556 69 2,112 75	20 94
4				1				1 30						63 10	63 70	
3				2				1 48						48 94	50 00	
1				2				61						76 40	54 00	
2				1				59						30 30		
3				8				70						64 95	85 80	
2			1	68				3 80				4		519 15	479 33	
11				22	1	17 70	1	6 59						290 94	140 70	
7	1			12				3 60				2	2	150 43	111 05	
								9						7 80	10 00	
1								31						8 02	9 55	
3								1 61						48 60	29 06	
29	6			96	5	56 00		13 19				8		961 00	724 50	
								42				1		47 30	40 60	
35	14			201	2	19 00		19 52		2	12 00	24		1,657 15	1,359 84	
12	3			17				5 13				1		250 95	277 12	
6	70		1	47				3 62				6		267 38	198 85	
6			1	9				2 61						266 15		
3	3			15				2 45				3		194 95	113 15	
4	3		2	30				3 21				3		287 95	134 43	
14			1	35				6 92						357 10	253 85	
1	1	1		5				1 10				1	1	60 90		
28	10	6	3	285	4	48 00		22 46	10 25	8	76 00	41	2	2,051 25		
22				29	1	12 00		12 96				11		616 60	445 86	
4	2			1				1 35						74 00		
1														14 46	9 95	

TABLE

Returns of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Frontenac	1	877	31,307 46	18	903 06	110	226 00	14,532 09	14,571 90	186 10	816
	2	Abolished	.....	...	.....	.....	... ...	.....	.....	.....	.....
	3	19	660 79	3	107 59	2	5 25	794 38	799 63	.....	17
	4	81	3,337 02	5	143 86	5	....	1,974 35	1,974 35	.....	81
	5	Vacant	.....	.....	.....	.....	.....	.....	.....	.....	.....
	6	60	2,902 07	.....	.....	3	5 00	1,700 05	1,705 05	.....	40
	7	21	1,055 65	2	48 44	1	.....	244 42	244 42	.....	17
Grey..	1	371	10,496 73	11	610 42	78	207 85	5,283 96	4,578 27	906 54	255
	2	25	919 46	11	614 42	1	.....	1,065 87	1,053 87	12 00	11
	3	114	4,097 39	5	94 07	8	143 56	1,373 01	1,352 54	164 03	107
	4	82	2,297 48	7	335 89	8	.....	1,457 10	1,383 20	73 90	67
	5	76	2,150 76	5	391 27	4	176 17	1,990 44	2,003 51	163 10	72
	6	33	1,395 64	1	21 75	.....	1 00	960 74	936 11	25 63	30
	7	95	4,305 05	9	728 57	10	169 84	2,234 44	2,265 71	138 57	93
	8	33	1,548 91	8	144 26	1	.....	831 39	783 44	47 95	30
Haldimand.	1	45	1,958 29	3	151 14	7	230 17	831 99	829 05	233 11	50
	2	43	728 77	1	221 83	.....	72 20	356 88	430 86	70 42	22
	3	168	5,750 88	6	320 45	34	323 14	1,812 81	1,715 17	420 79	13
	4	63	3,115 00	2	185 00	6	84 61	1,897 01	1,902 06	78 56	63
	5	22	1,222 90	.....	.....	1	.....	444 98	444 98	.....	20
Haliburton'.....	1	15	557 19	2	66 27	1	.....	510 35	510 35	.....	.....
	2	25	2,088 42	2	225 86	.....	.....	1,577 77	1,577 77	.....	18
	3	30	1,118 77	1	35 96	7	.....	370 57	321 57	49 00	29
	4	3	147 70	.....	.....	.....	.....	.....	.....	.....	.....
Halton.....	1	61	1,873 36	5	187 93	6	1 00	1,000 02	1,001 02	.....	59
	2	54	2,207 97	6	258 83	1	129 36	1,474 12	1,409 12	65 00	55
	3	46	2,503 53	3	59 74	1	173 65	906 90	953 53	127 02	40
	4	39	1,364 93	1	100 47	5	16 22	1,081 72	1,009 92	89 02	36
	5	23	1,007 40	1	14 12	.....	....	494 07	494 07	.....	22
	6	89	2,347 23	24	1,438 14	.....	338 74	1,533 85	1,393 62	478 87	87
Hastings.....	1	489	22,503 63	34	1,173 04	74	942 81	8,720 02	8,811 66	851 17	325
	2	27	682 98	3	58 38	5	96 33	584 94	681 27	136 75	32
	3	8	279 40	1	57 80	.....	.....	176 90	176 90	.. ..	.....
	4	62	2,512 48	3	150 10	2	61 85	1,150 71	1,091 69	120 87	56
	5	72	2,949 15	4	455 61	3	139 95	2,005 80	1,953 79	190 96	69
	6	163	5,479 62	5	549 47	4	8 00	2,678 43	2,560 95	125 18	160
	7	24	722 30	1	28 02	.....	.....	454 60	454 60	.....	4
	9	443	20,243 31	30	1,864 01	66	150 43	12,026 16	11,610 24	566 35	315
	10	53	2,032 07	4	561 74	.....	13 00	1,225 62	1,278 62	47 00	55
	11	26	1,185 32	3	208 55	.....	3 63	846 51	759 46	90 68	23
	12	87	4,767 59	12	686 86	5	.....	1,752 51	1,666 50	66 01	76
Huron	1	81	3,085 02	5	198 22	3	33 50	2,155 07	2,161 87	26 68	75
	2	72	2,474 45	5	280 04	9	122 10	2,114 07	2,162 22	83 95	70
	3	53	2,345 47	8	324 35	.....	2 10	1,330 97	1,333 07	....	46
	4	27	898 68	5	355 35	.....	.....	1,188 16	1,188 16	.....	23
	5	51	2,875 91	7	335 52	5	2 00	2,148 31	2,092 81	57 50	44
	6	9	544 87	2	61 20	.....	.....	336 11	336 11	.....	8
	7	4	123 00	1	26 43	.....	.....	135 68	135 68	.....	4
	8	67	2,264 76	3	.....	3	17 99	1,481 13	1,499 12	.....	63
	9	27	1,197 46	3	284 90	2	....	794 19	794 19	.....	25
	10	31	1,624 29	3	296 75	5	56 14	1,268 08	1,225 10	42 98	26
	11	2	80 75	4	189 45	.....	....	37 27	37 27	.....	2
	12	38	1,101 75	3	100 00	.....	30 00	893 90	872 90	51 00	33

A.—Continued.

to the 31st day of December, A.D. 1918, inclusive, shewing.—Continued.

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of section 43, D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
61			2	224				30 25				15		1,948 05	1,260 24	
2				4				39						45 33	51 05	
4				19				2 72						195 10	201 55	
															42 05	
4				7				2 74						211 23	105 95	
3								1 38						69 55	44 93	
15	6			124				9 18				16	3	1,132 17	600 12	2 28
1				4				70						76 93	146 93	
7	1			37				3 49				1		235 65	129 50	
5				7				3 00		1	5 00	2		227 50	270 40	
4	1			11				2 71						192 00	222 21	
2				6				1 29						72 83	94 60	
10				24				3 32				1		216 75	237 65	
1	3			9				1 49						100 00	67 20	
2				4	1	12 00		1 51				2		127 60	76 56	
1				6				58						41 85		
8				58				4 52				7		368 85	211 89	
3				8				2 63						141 95	132 28	
2	1							91						70 15	81 90	
				4				42						44 80	74 25	
2	1			3				1 70						99 60	18 65	
1				4				1 21						83 90	80 40	
3				1				9						10 70		
2	1			21	1	11 00						1		164 00	87 45	
4	1			7				2 07				1		127 25	70 65	
5				3				2 36		1	5 00			138 31		
1				7				1 22						134 25	53 00	
1	1			3				88						62 36	25 90	
1				29				1 73						186 32	185 00	
26	35		1	146	1	15 50		13 70				11	7	1,493 80	834 83	
				7				45						88 71	98 05	
								27						9 60		
6	1			13				2 64						155 90	147 31	
6	1			16				3 00		1	5 00			175 63	138 65	
4	1			25	2	21 00		5 38						327 90		
				7				63						32 58	15 45	
26	3			102	1	24 00		14 72		2	8 00	8		1,551 78	921 86	9 77
2				8				1 92						107 01	80 90	
2				1				1 40						78 37	129 30	
11				12				4 52						195 15	160 14	
6	2			19				2 85				1	1	206 44	112 20	
12				17				2 00						164 60	145 70	1 25
7				13				1 78						122 90	50 98	
1	2			2				1 53						81 77	67 55	
7	1			5				2 89						175 30	198 62	
1				1				55						30 65	29 20	
								9						17 30	19 85	
3	1			26				1 96						169 35	125 50	
4				11				1 30						48 30	62 75	
5				9				1 45						71 13	91 10	
								3						18 70	23 70	
3			1	4				1 07						95 80	32 40	

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Kenora	1	148	7,516 68	.....	.....	1	621 40	2,595 62	2,473 77	743 25	130
	2	5	192 00	.....	.....	.....	.....	8 70	8 70	.....	5
	3	32	1,935 40	.....	.....	.....	119 87	324 56	413 78	30 65	29
	4	6	427 06	.....	.....	.....	194 23	237 49	181 49	250 23	5
Kent	1	601	23,457 00	20	1,249 73	83	2,005 10	9,177 80	9,628 50	1,554 40	549
	2	172	5,818 49	10	713 17	16	267 50	4,204 93	4,039 47	432 96	136
	3	110	4,040 76	8	607 48	17	22 00	2,761 30	2,661 53	121 77	95
	4	135	5,584 28	3	268 47	13	6 52	4,884 70	4,888 52	2 70	122
	5	274	8,355 82	7	286 32	5	244 64	5,005 46	4,939 60	210 50	246
	6	73	3,804 94	9	358 63	8	.....	1,817 25	1,810 75	6 50	68
	7	101	5,133 01	4	342 85	5	9 39	2,914 68	2,767 39	156 68	88
Lambton	1	806	24,157 52	23	1,476 29	57	144 93	17,284 58	16,961 22	468 29	738
	2	36	1,209 13	4	161 70	.....	168 50	641 91	802 91	7 50	35
	3	38	1,818 76	9	709 80	3	.....	1,302 30	1,302 30	.....	33
	4	20	367 87	.....	.....	2	.....	459 10	416 10	43 00	14
	5	63	2,237 44	2	78 25	3	.....	1,818 85	1,818 85	.....	60
	6	7	392 70	5	103 00	1	.....	387 37	387 37	.....	6
	8	134	4,678 34	4	312 37	4	.....	2,448 73	2,448 73	.....	134
	9	32	1,938 46	3	.....	1	.....	1,535 79	1,535 79	.....	27
Lanark	1	109	3,165 91	9	560 80	15	32 44	1,922 38	1,807 09	57 73	108
	2	41	1,740 81	9	542 19	4	11 60	1,355 72	1,308 33	58 99	38
	3	79	2,383 33	5	265 13	5	.....	1,133 67	1,133 67	.....	82
	4	384	12,599 45	15	590 75	14	117 60	7,195 53	6,946 73	366 40	367
	5	45	1,530 53	5	152 35	3	.....	1,137 28	1,137 28	.....	44
Leeds and Grenville	1	564	15,734 55	10	570 00	14	36 01	10,686 50	10,679 63	42 88	552
	2	171	4,368 41	7	597 56	6	3 95	2,313 46	2,072 34	241 42	169
	3	57	2,281 35	3	159 23	5	.....	880 53	870 84	9 69	48
	4	51	1,593 90	3	187 89	6	28 57	1,213 81	1,150 96	91 42	49
	5	26	1,267 26	1	60 80	1	.....	442 62	442 62	.....	23
	6	83	3,897 44	2	109 51	9	.....	2,050 19	2,045 19	5 00	76
	7	11	321 87	1	48 34	.....	51 94	244 69	290 69	5 94	11
	8	60	2,551 54	6	313 22	4	.....	1,443 45	1,443 45	.....	51
	9	38	1,367 02	3	264 71	1	12 96	758 11	757 11	13 96	34
	10	18	802 93	3	175 88	1	16 51	749 89	707 74	58 66	18
	11	9	317 97	.....	.....	.....	.....	180 47	180 47	.....	8
	12	26	607 64	1	11 99	5	.....	461 05	461 05	.....	31
Lennox and Addington	1	114	4,345 05	5	136 01	8	26 27	1,574 14	1,402 55	197 86	101
	2	13	620 97	1	24 59	1	20 00	345 35	365 35	.....	13
	3	7	289 78	2	56 50	1	.....	141 09	141 09	.....	5
	4	8	272 94	.....	.....	2	29 71	144 18	153 89	20 00	8
	5	8	373 42	.....	.....	.....	262 01	280 57	425 45	117 13	4
	6	15	639 38	.....	.....	1	.....	498 94	498 94	.....	13
	7	32	1,819 21	.....	.....	.....	9 00	780 63	789 63	.....	26
	8	17	558 13	.....	.....	1	7 30	225 88	225 88	7 00	17
	9	5	276 83	.....	.....	.....	.....	41 95	41 95	.....	

A.—Continued.

to the 31st day of December, A.D. 1918, inclusive, shewing.—Continued.

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of section 43, D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.		
18	.....	.....	.....	18	.....	.....	....	.....	.....	....	.....	.....	....	472 24	.....	.....
.....	.....	.....	1	1	.....	.....	....	.....	.....	.....	.....	.....	....	9 25	.....	.....
2	1	.....	.....	4	.....	.....	....	.....	.....	.....	.....	.....	....	95 75	.....	.....
1	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	14 50	.....	.....
46	6	.....	2	149	.....	.....	....	23 21	.....	5	45 00	17	....	1,573 69	462 30 430 35	7 01
15	2	.....	.....	22	1	12 00	....	7 53	.....	2	10 00	.....	....	375 00	300 55	.....
11	.....	.....	2	33	.....	.....	....	5 89	.....	.....	.....	4	....	283 09	227 27	.....
12	3	.....	.....	24	.....	.....	....	5 52	.....	.....	.....	1	....	312 60	219 44	.....
16	2	.....	.....	90	.....	.....	....	8 14	.....	2	20 00	4	....	604 60	469 69	.....
8	.....	.....	.....	14	.....	.....	....	4 32	.....	.....	.....	.....	....	205 38	256 65	.....
9	1	.....	.....	11	.....	.....	....	5 22	.....	.....	.....	.....	....	267 10	183 81	20
68	12	.....	.....	219	.....	.....	....	19 54	.....	2	10 00	18	....	1,717 10	1,052 56	.....
1	.....	.....	.....	8	.....	.....	....	85	.....	.....	.....	.....	....	77 25	73 47	.....
5	.....	.....	.....	7	.....	.....	....	1 94	.....	.....	.....	.....	....	113 22	128 30	.....
2	.....	.....	.....	4	.....	.....	....	46	.....	.....	.....	.....	....	45 00	75 03	.....
3	1	.....	.....	19	1	12 00	....	1 71	.....	.....	.....	.....	....	.....	100 00	.....
1	.....	.....	.....	.....	.....	.....	....	37	.....	1	10 00	.....	....	25 65	36 02	.....
9	2	.....	.....	32	.....	.....	....	4 71	.....	2	10 00	.....	....	211 65	.....	.....
6	.....	.....	.....	2	.....	.....	....	2 35	.....	.....	.....	.....	....	91 35	74 43	.....
1	1	.....	1	31	.....	.....	....	2 20	.....	.....	.....	3	....	374 70	179 32 98 67	.....
3	.....	.....	.....	5	.....	.....	....	1 68	.....	.....	.....	2	....	110 20	93 05	.....
2	.....	.....	.....	13	.....	.....	....	2 21	.....	.....	.....	.....	....	180 40	118 57	.....
17	.....	.....	.....	81	.....	.....	....	11 36	.....	.....	.....	6	....	938 18	398 70	.....
1	2	.....	.....	10	.....	.....	....	1 24	.....	.....	.....	.....	....	132 65	87 65	.....
24	2	4	.....	201	.....	.....	....	14 96	.....	.....	.....	2	....	1,267 20	377 17 344 07	.....
6	1	.....	.....	71	.....	.....	....	3 44	.....	.....	.....	3	....	347 16	254 75	.....
6	.....	.....	.....	7	.....	.....	....	2 34	.....	.....	.....	.....	....	154 99	101 65	.....
2	.....	.....	.....	13	.....	.....	....	1 28	.....	.....	.....	.....	....	141 80	123 34	.....
1	.....	.....	.....	6	.....	.....	....	1 08	.....	.....	.....	.....	....	48 75	40 85	.....
7	.....	.....	.....	17	.....	.....	....	3 46	.....	.....	.....	1	....	189 65	242 72	.....
.....	.....	.....	.....	3	.....	.....	....	21	.....	.....	.....	.....	....	21 70	.....	.....
4	3	.....	2	4	.....	.....	....	2 32	.....	.....	.....	.....	....	193 10	2 80 202 20	.....
5	.....	.....	.....	11	.....	.....	....	1 85	.....	.....	.....	.....	....	103 75	80 79	.....
.....	.....	.....	.....	1	.....	.....	....	45	.....	.....	.....	.....	....	31 90	.....	.....
1	.....	.....	.....	3	.....	.....	....	40	.....	.....	.....	.....	....	25 51	32 95	.....
2	.....	.....	.....	8	.....	.....	....	89	.....	.....	.....	.....	....	73 45	96 25	.....
9	1	.....	.....	19	.....	.....	....	4 14	.....	.....	.....	1	....	267 95	164 65	.....
.....	.....	.....	.....	2	.....	.....	....	42	.....	.....	.....	.....	....	48 03	.....	.....
1	.....	1	.....	1	.....	.....	....	12	.....	.....	.....	.....	....	15 60	.....	.....
.....	.....	1	.....	1	.....	.....	....	18	.....	.....	.....	.....	....	22 50	15 40	.....
1	1	.....	.....	2	.....	.....	....	43	.....	.....	.....	.....	....	18 87	36 45	.....
2	.....	.....	.....	3	.....	.....	....	77	.....	.....	.....	.....	....	32 75	25 75	.....
6	.....	.....	.....	4	.....	.....	....	2 10	.....	.....	.....	.....	....	102 05	79 80	.....
.....	.....	3	.....	5	.....	.....	....	39	.....	.....	.....	1	....	47 74	35 05	.....
.....	.....	.....	.....	.....	.....	.....	....	21	.....	.....	.....	.....	....	12 80	15 85	.....

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Lincoln	1	53	2,921 29	12	531 41	4	144 17	1,736 83	1,736 83	144 17	48
	2	172	12,167 23	38	2,350 37	49	134 44	11,908 58	12,133 61	209 41	429
	3	53	2,340 04	6	309 25	8	5 00	1,741 26	1,745 81	45	53
	4	84	3,089 31	9	693 00	13	89 90	2,781 60	2,789 84	81 66	59
	5	107	5,154 28	12	616 94	27	.....	1,983 00	1,960 57	22 43	91
Manitoulin	1	8	396 28	3	166 96	.. ..	.....	711 12	711 12	.....	7
	2	7	240 64	4	86 49	.....	.....	357 47	330 76	26 71	6
	3	Vacant	.....	.. ..	.....	....	.....	.....	.....	.....	.....
Middlesex	1	1,683	53,516 12	37	2,282 90	173	452 97	28,017 39	27,916 56	553 80	1,753
	2	105	3,618 77	1	112 15	.....	.....	1,837 05	1,837 05	.....	98
	3	29	848 94	5	155 96	.....	53 96	631 76	630 69	55 03	29
	4	26	1,320 23	22	667 91	3	119 57	764 32	729 55	31 77	21
	5	50	1,964 66	8	730 80	6	29 86	855 26	789 02	96 10	46
	6	58	1,948 89	6	358 35	4	.....	1,302 29	1,302 29	.....	46
	7	51	1,894 35	7	208 18	2	.....	1,372 82	1,285 24	87 58	44
	8	5	291 25	2	83 75	.....	7 13	260 00	267 13	.....	5
	9	355	8,781 85	12	648 25	56	211 76	3,494 61	3,355 33	139 28	350
Muskoka	1	59	1,866 06	10	51 88	.....	63 00	1,341 49	1,404 49	.....	46
	2	34	1,283 50	1	37 60	....	56 38	507 49	550 35	13 52	34
	3	61	2,096 47	3	.....	6	96 00	1,596 65	1,530 47	162 18	50
Nipissing	1	151	2,586 20	17	1,237 96	2	12 08	2,173 23	2,031 77	141 46	141
	2	48	1,481 50	3	273 59	.....	14 50	817 22	775 62	41 60	37
	3	504	20,725 52	9	456 23	27	36 06	10,088 59	10,069 77	54 88	470
Norfolk	1	226	6,668 50	9	511 27	25	378 91	3,737 48	3,212 23	525 25	217
	2	55	2,373 82	7	308 31	10	5 00	1,253 27	1,253 27	5 00	50
	3	6	245 70	2	57 05	1	4 52	228 03	232 55	.....	5
	4	54	2,143 58	8	553 35	6	14 71	719 74	706 74	27 71	50
	5	22	716 40	. ...	.....	. ...	.....	746 38	746 38	.....	22
	6	59	2,111 83	7	208 21	9	.....	1,127 34	1,127 34	.....	56
	7	20	1,104 02	4	298 01	1	20 45	422 69	439 69	3 45	17
	8	31	1,395 06	3	116 30	1	45 00	411 19	379 19	77 00	28
Northumberland and Durham	1	91	2,647 99	10	429 28	4	61 73	2,818 32	2,811 73	68 32	87
	2	19	818 92	6	428 97	2	54 01	465 33	483 21	36 13	18
	3	102	3,508 87	4	339 54	.....	71 57	2,105 98	2,177 55	.....	99
	4	35	1,681 87	2	108 30	.....	12 75	876 47	889 22	.....	29
	5	158	5,073 35	8	372 58	10	.....	2,528 90	2,528 90	.....	152
	6	21	852 22	2	174 10	.....	12 75	410 59	410 59	12 75	19
	7	68	2,668 94	2	74 33	2	79 23	1,347 11	1,379 94	46 70	62
	8	150	6,395 00	15	13 75	12	119 93	3,099 73	3,212 66	7 00	134
	9	45	1,697 91	5	312 79	3	.....	907 70	907 70	.....	42
	10	21	818 18	1	14 02	.....	.....	.....	.....	.....	19
	11	134	4,328 49	4	119 58	2	157 95	1,983 89	1,848 37	289 47	119

A.—Continued.

to the 31st day of December, A.D. 1918, inclusive, shewing.—Continued.

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of section 43, D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
5	.....	.....	.....	4	.....	.....	....	2 57	.....	1	10 00	.....	....	150 10	76 00	.....
12	2	.....	.....	85	.....	.....	....	19 72	.....	3	30 00	9	....	1,310 15	859 97	7 00
5	.....	.....	.....	14	.....	.....	....	2 56	.....	2	20 00	3	....	158 60	152 32	.....
6	.....	.....	.....	19	.....	.....	....	3 76	.....	.....	.....	1	1	251 35	169 24	.....
16	.....	.....	.....	19	.....	.....	....	5 83	.....	1	10 00	.....	....	279 55	203 05	.....
1	.....	.....	.....	1	.....	.....	....	.....	.....	.....	.....	.....	....	38 53	100 64	.....
1	.....	.....	.....	2	.....	.....	....	.....	.....	.....	.....	.....	....	14 20	9 70	.....
.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	.....	12 35	.....
83	.....	.....	3	573	3	37 50	....	46 19	384 36	.....	.....	6	....	3,781 20	1,958 35	.....
7	.....	.....	.....	39	.....	.....	....	3 46	.....	.....	.....	.....	....	170 45	113 68	.....
.....	.....	.....	.....	7	.....	.....	....	60	.....	.....	.....	.....	....	69 44	.....	7 00
5	.....	.....	.....	5	.....	.....	....	1 79	.....	.....	.....	.....	....	91 38	102 73	.....
4	.....	.....	1	12	.....	.....	....	1 56	.....	.....	.....	2	....	156 02	143 26	.....
2	.....	.....	1	9	1	13 20	....	1 67	.....	.....	.....	.....	....	148 35	103 80	.....
2	.....	.....	.....	7	.....	.....	....	1 49	.....	.....	.....	.....	....	107 65	122 53	.....
.....	.....	.....	.....	.....	1	19 50	....	18	.....	.....	.....	.....	....	16 83	.....	.....
5	.....	.....	.....	121	1	11 00	....	7 22	.....	.....	.....	2	....	783 50	315 50	.....
4	.....	.....	.....	9	.....	.....	....	.....	.....	.....	.....	.....	....	149 57	66 91	.....
1	.....	.....	.....	3	.....	.....	....	.....	.....	.....	.....	.....	....	84 65	63 82	.....
2	.....	.....	.....	9	.....	.....	....	.....	.....	.....	.....	.....	....	156 05	102 40	.....
19	.....	.....	.....	41	.....	.....	....	.....	.....	.....	.....	.....	....	292 56	308 15	.....
.....	.....	.....	.....	11	.....	.....	....	.....	.....	.....	.....	.....	....	101 00	94 10	.....
34	.....	.....	.....	85	.....	.....	....	.....	.....	6	23 00	6	1	1,318 80	3 10 762 18	.....
9	.....	.....	.....	62	.....	.....	....	5 34	.....	2	10 00	3	....	434 85	379 54	.....
5	.....	1	.....	14	.....	.....	....	1 98	.....	.....	.....	.....	....	106 80	98 94	.....
1	.....	.....	.....	1	.....	.....	....	34	.....	.....	.....	1	....	13 55	.....	.....
3	.....	.....	.....	9	.....	.....	....	1 95	.....	.....	.....	1	....	131 75	.....	.....
.....	.....	.....	.....	2	.....	.....	....	60	.....	.....	.....	.....	....	74 75	93 37	.....
3	.....	.....	.....	22	.....	.....	....	1 56	.....	.....	.....	1	....	167 95	186 85	.....
3	.....	.....	.....	2	.....	.....	....	1 14	.....	.....	.....	.....	....	66 68	68 26	.....
3	.....	.....	.....	4	.....	.....	....	1 44	.....	.....	.....	.....	....	54 72	29 23	.....
4	.....	.....	.....	32	.....	.....	....	2 35	.....	.....	.....	2	1	237 70	161 35	.....
1	.....	.....	.....	2	.....	.....	....	76	.....	.....	.....	1	....	75 75	110 14	.....
3	.....	.....	.....	23	.....	.....	....	2 97	.....	.....	.....	.....	....	260 85	135 98	.....
5	.....	.....	.....	6	.....	.....	....	1 94	.....	.....	.....	.....	....	88 78	.....	.....
5	.....	.....	.....	42	.....	.....	....	4 17	.....	.....	.....	.....	....	304 54	178 47	.....
2	.....	.....	.....	7	.....	.....	....	89	.....	.....	.....	.....	....	45 67	82 02	.....
6	.....	.....	.....	11	1	14 80	....	2 72	.....	.....	.....	3	....	190 30	133 73	.....
16	.....	.....	.....	44	.....	.....	....	6 81	.....	.....	.....	.....	....	363 85	.....	.....
3	.....	8	.....	9	.....	.....	....	1 68	.....	.....	.....	.....	....	111 45	83 47	.....
2	.....	.....	.....	4	.....	.....	....	18	.....	.....	.....	.....	....	.....	31 90	.....
12	.....	.....	.....	32	2	21 00	....	5 19	.....	.....	.....	.....	....	295 42	.....	.....

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Ontario	1	207	6,991 69	24	1,466 78	14	10 96	6,762 03	6,751 00	21 99	192
	2	69	2,360 48	6	284 67	5	.....	1,861 65	1,861 65	.....	55
	3	34	2,616 24	2	.....	3	.....	339 69	339 69	.....	24
	4	73	3,182 99	1	.....	1	8 20	1,005 52	1,013 72	.....	65
	5	44	1,718 82	2	30 95	.....	192 57	1,515 55	1,648 46	59 66	38
	6	13	313 65	3	14 62	.....	.....	172 60	172 60	.....	13
	7	19	659 09	4	101 85	1	31 72	716 14	747 86	.....	19
Oxford.....	1	521	19,652 68	17	1,198 43	153	234 32	12,617 80	12,389 08	228 72	45
	2	29	835 60	3	103 00	1	11 36	732 81	741 17	3 00	29
	3	11	724 61	... ..	.....	2	.....	625 27	625 27	.....	8
	4	113	3,437 79	3	367 42	11	26 04	1,926 51	1,736 52	216 03	118
	5	261	9,289 31	9	391 04	5	233 06	5,847 48	5,670 37	410 17	241
	6	247	8,877 98	8	414 81	7	90 20	3,890 15	3,933 60	46 75	232
	7	21	767 07	.....	.....	1	.....	479 97	479 97	.....	19
Parry Sound....	1	314	12,144 58	5	338*65	1	492 59	9,029 41	8,348 81	514 83	258
	2	10	689 18	2	180 51	.....	58 13	388 42	446 55	.....	8
	3	2	104 95	5	440 92	.....	.....	61 96	58 31	3 65	.....
	4	68	3,199 20	3	142 55	4	39 35	1,427 26	1,410 61	56 00	59
	5	10	547 64	1	36 92	1	.....	270 72	198 53	72 19	11
	6	48	1,886 93	4	61 06	....	.....	442 31	391 31	51 00	49
	7	41	2,278 55	1	71 25	2	.....	1,076 28	1,076 28	.....	37
Peel.....	1	86	4,500 06	5	345 51	6	.....	1,818 24	1,818 24	.....	73
	2	54	2,631 36	12	807 16	1	.....	2,595 08	2,592 08	3 00	42
	3	29	1,292 49	7	449 50	10	.....	1,043 92	1,043 92	.....	33
	4	12	901 07	1	57 58	.....	10 00	150 70	150 70	10 00	9
Perth	1	436	15,398 56	26	1,570 41	58	111 58	9,023 37	9,061 27	73 68	407
	2	54	2,514 40	1	20 89	7	.....	1,215 27	1,215 27	.....	50
	3	168	6,091 98	5	276 26	6	....	3,983 73	3,926 74	56 99	154
	4	7	350 58	1	36 56	.....	4 00	260 24	264 24	.....	6
	5	13	621 12	4	40 54	1	.....	615 23	615 23	.....	12
	6	148	6,448 82	17	741 15	2	.....	2,982 47	2,982 47	....	135
Peterborough ..	1	384	13,375 87	25	1,768 93	94	101 25	7,832 78	7,934 03	284 75	365
	2	39	2,696 22	1	95 10	2	.....	1,316 93	1,316 93	.....	30
	3	37	1,393 99	4	375 29	.....	51 91	618 72	620 63	50 00	33
	4	4	12 08	1	190 00	.....	.....	31 43	31 43	.....	.....
	5	76	2,638 93	4	181 80	3	.....	1,138 27	1,016 15	122 12	73
	6	2	156 07	.....	.....	... ..	.....	156 07	156 07	.....	2
Prescott and Russell.....	1	54	1,891 11	.....	.....	1	.....	1,891 11	1,891 11	.....	50
	2	46	2,148 87	2	11 97	.....	.....	906 24	906 24	.....	39
	3	19	652 10	1	63 25	.....	.....	607 26	607 26	.....	18
	4	74	3,500 38	2	213 48	8	.....	1,942 37	1,942 37	.....	59
	5	22	1,189 60	1	93 39	.....	37 23	357 30	394 53	.....	19
	6	59	3,111 29	2	163 01	3	.....	1,213 29	1,209 29	4 00	52
	7	308	6,792 72	.....	.....	32	.....	2,762 53	2,762 53	.....	335
	8	55	1,674 53	2	229 67	1	... .	1,012 66	1,012 66	.....	36
	9	63	3,349 04	1	43 18	4	26 70	880 36	907 06	....	53
	10	106	3,763 59	3	325 66	11	.. ..	1,130 45	951 96	175 49	53
	11	61	2,649 96	2	166 36	5	.....	1,306 67	1,302 67	4 00	54
Prince Edward..	1	382	12,098 82	2	203 82	186	95 85	4,908 01	4,931 63	72 23	545
	2	5	225 40	1	30 00	.....	.....	210 40	210 40	.....	4
	3	1	79 26	.....	.....	.....	.....	106 51	106 51	.....	1
	4	6	189 29	6	352 38	1	.....	461 98	461 98	.....	6
	5	23	1,121 49	3	37 07	6	42 80	517 42	545 22	15 00	26
	6	7	335 53	1	11 31	1	.....	198 94	198 94	.....	7
	7	16	795 48		197 86	1	.....	297 00	285 00	12 00	16
	8		No business		.....	.....	.....	.....	.....	.....	.....

A.—Continued.

to the 31st day of December, A.D. 1918, inclusive, shewing.—Continued.

Number of suits entered where claim does not exceed $300.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of section 43, D.C.A.
				43	2	$ c. 22 40		$ c. 5 93			$ c.	2		$ c. 482 50	$ c. 578 54	$ c.
				15				3 08		2	20 00			161 10	161 77	
				3	1	20 60		2 70		1	10 00			101 95	93 75	
				12				3 09						181 65	104 65	
	1			2				1 52						135 64		
				5				18						22 75	21 85	
				3				45						67 00	56 90	
47	3		1	171				19 49		1	10 00	29		1,429 42	1,114 57	
				10				54						61 05	72 27	
3								1 05						54 50	60 00	
4				43				2 71				1		253 60	179 30	
15				79				9 17		1	3 00	2		620 15	470 40	
9			1	59				7 98				2		479 20	453 30	
2				3				86						53 41	24 35	
10	3		2	38										615 71	589 25	
2														39 30	42 31	
														12 20	31 78	
5				4										166 10		
				1										19 53	33 20	
1				6						1	4 00			104 94	95 35	
4				2								1		92 20	98 25	
9				22				5 41		2	15 00			193 35	142 04	
6				4	1	9 00		2 36						102 00	150 30	
4				9				1 48						92 74	128 70	
2				1				1 17						38 80	35 12	
26				109				14 72		3	20 00	15	3	1,218 20	867 92	
2				7				2 64						163 24		
14			2	35				6 04						332 30	260 25	
1				1	1	12 00		43						20 45	17 05	
1				5				49						31 55	36 85	
13				42				5 65				5		372 20	230 23	
11	12			91	1	12 00		10 55		1	10 00	10		972 15		
7					1	14 40		3 37						110 40		
4	1			9				1 60						92 90		15 25
								6						10 99		
4			1	17				2 38		1	5 00			192 10	103 35	
								12						5 03	7 40	
4				15				1 99						93 67	93 85	
5				8				2 15						94 99	78 19	
			1	3				39						46 40	39 84	
15			1	13				4 86				1		246 75	298 04	
3			1	1				1 29						53 95		
8				8				3 35				2		137 55	140 70	
5				136				8 07				9		683 50	292 50	
4				15				2 26						100 61	92 72	
10	3			12				3 73		1	10 00			183 85	119 66	
7				20				3 61						212 00	127 07	
7				8				2 98				1		140 27	162 40	
21	4			26				3 77				15		1,079 10	831 37	
				2				15						16 60		
								6						4 30	2 80	
								12						37 70	20 55	
1				2				95						76 97		
1				3				52						16 00	14 70	
3				3				105						52 87	46 60	

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Rainy River	1	155	7,481 85	1	84 54	4	275 62	3,217 75	3,207 96	285 41	141
	2	Vacant	.. ..	.....	.....	.....	.....	.....	.....	.....	.....
	3	74	4,672 43	3	398 36	.....	484 42	1,628 30	1,699 78	512 94	60
Renfrew	1	145	5,877 68	4	232 27	15	.....	2,243 00	1,869 68	1,373 32	137
	2	Vacant	.....	.....	.....	.....	.....	.....	.....	.....	.....
	3	226	7,852 04	12	912 58	6	328 52	3,497 67	3,487 89	95 05	216
	4	101	3,212 07	10	572 00	9	313 78	2,681 13	2,933 14	62 07	97
	5	47	2,819 45	.....	.....	.....	130 00	808 45	808 45	130 00	58
	6	20	1,261 42	3	306 30	.....	42 66	1,063 16	1,097 68	98 14	16
	7	55	3,231 31	6	236 69	5	20 00	1,593 67	1,592 87	20 80	46
Simcoe	1	262	11,845 32	10	583 97	17	196 07	6,223 20	5,933 66	485 61	200
	2	51	2,552 61	3	153 69	7	317 07	1,044 57	1,259 39	66 25	46
	3	41	2,178 31	5	356 20	6	6 86	1,152 94	1,131 14	28 66	35
	4	133	5,285 32	8	341 92	6	154 45	2,589 92	2,719 22	25 15	124
	5	28	1,337 70	2	108 53	6	45 50	889 72	793 98	141 24	26
	6	463	14,641 21	13	905 05	62	159 56	8,086 53	7,762 36	324 17	504
	7	9	320 47	10	370 18	1	.....	438 82	438 82	... .	9
	8	58	2,836 62	3	128 73	4	212 52	1,082 73	1,010 44	72 29	41
	9	719	24,016 12	8	558 79	18	753 21	12,448 69	12,242 98	958 92	719
	10	75	2,361 67	4	185 88	8	18 30	1,469 84	1,488 14	....	44
Stormont, Dundas and Glengarry	1	55	3,470 88	6	499 40	11	100 00	939 45	1,013 90	25 55	48
	2	126	6,190 31	6	342 11	17	84 58	3,566 96	3,539 96	27 00	144
	3	267	8,767 07	1	89 96	32	17 00	5,930 76	5,930 76	17 00	252
	4	22	1,190 50	.....	... .	8	.....	909 94	909 94	.....	19
	5	47	1,846 31	2	97 82	14	175 36	656 60	815 52	16 44	36
	6	35	1,724 12	1	20 25	1	. ...	380 12	380 12	.....	31
	7	28	1,575 27	1	317 85	3	37 00	905 47	930 49	12 00	23
	8	58	3,432 92	13	889 32	7	. .....	1,900 26	1,780 26	120 00	46
	9	46	1,960 74	.....	176 30	6	.....	1,044 99	1,044 99	.....	49
	10	84	5,364 28	2	62 17	9	211 25	2,697 54	2,815 29	93 50	70
	11	27	1,245 72	1	90 76	1	15 00	908 42	893 42	30 00	24
	12	29	1,280 72	15	247 79	4	2 00	1,340 78	1,343 78	.....	26
Sudbury	1	1,210	57,497 00	23	1,069 00	126	1,970 60	29,069 15	28,741 00	2,298 75	1,146
	2	97	5,818 13	11	869 01	1	36 35	1,916 57	1,723 44	229 48	83
	3	47	1,668 09	3	176 45	.. ...	272 22	650 58	786 07	136 73	.....
	4	21	1,235 63	3	176 43	2	.....	1,018 97	1,018 97	.....	18
	5	90	3,633 54	.....	.....	.....	409 32	1,988 73	2,398 05	.....	86
Timiskaming ...	1	386	17,798 24	39	2,119 45	72	561 73	8,017 05	8,226 11	352 67	355
	2	381	22,531 05	26	1,962 61	145	321 95	6,872 79	6,921 87	272 87	269
	3	111	5,279 18	12	1,088 68	5	62 80	2,589 69	2,591 55	60 94	99
	4	20	1,216 12	1	100 00	.....	.....	390 39	390 39	....	17
	5	1,238	30,841 17	20	1,410 68	46	669 92	22,689 85	16,841 25	6,518 52	1,091
	6	287	18,266 72	18	1,133 65	25	1,106 02	6,900 27	6,807 37	1,198 92	219
	7	146	7,257 05	28	929 01	.....	300 89	3,587 47	3,695 04	193 32	131
Thunder Bay ...	1	506	27,360 37	6	283 75	21	278 88	12,099 24	12,112 52	265 60	441
	3	638	31,437 46	11	468 37	30	895 66	11,718 73	11,615 05	999 34	570

A.—Continued.

to the 31st day of December, A.D. 1918, inclusive, shewing.—Continued.

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of section 43, D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
14	.....	.....	.....	32	.....	.....	....	.....	.....	.....	.....	.. ..	....	380 10	.....	17 05
.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	.....	.....	.....	6	.....	.....	....	.....	.....	.....	.....	.....	....	157 08	.....	.....
8	3	.....	1	21	.....	.....	....	5 03	.....	.....	.....	3	2	303 10	349 14	.....
.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	51	.....	.....	....	6 61	.....	.....	.....	1	....	376 75	388 12	.....
4	.....	.....	.....	23	.....	.....	....	2 68	.....	.....	.....	3	....	298 65	.....	.....
8	.....	.....	.....	3	.....	.....	....	2 74	.....	1	5 09	.....	....	88 20	115 40	.....
5	1	.....	.....	2	.....	.....	....	1 48	.....	.....	.....	.....	....	58 09	51 05	.....
9	.....	.....	1	8	.....	.....	....	3 48	.....	.....	.....	.....	....	166 10	187 55	.....
25	.....	.....	.....	37	.....	.....	....	12 04	.....	1	5 00	3	....	753 10	246 07	.....
5	.....	.....	.....	17	.....	.....	....	2 63	.....	.....	.....	3	....	157 50	134 83	.....
2	.....	.....	.....	6	.....	.....	....	2 13	.....	.....	.....	1	....	109 25	.....	.....
16	.....	.....	4	25	.....	.....	....	5 29	.....	.....	.....	1	....	375 90	323 37	.....
2	.....	.....	.....	.....	.....	.....	....	1 38	.....	.....	.....	1	....	61 10	124 41	.....
21	.....	2	.....	134	.....	.....	....	12 24	.....	1	5 00	16	1	1,188 98	*350 70	.....
.....	.....	.....	.....	.....	.....	.....	....	27	.....	.....	.....	.....	.....	47 30	92 97	.....
8	.....	.....	.....	4	.....	.....	....	3 38	.....	1	2 00	2	....	126 77	80 80	.....
29	2	.....	1	229	.....	.....	....	18 17	.....	1	10 00	9	....	1,636 85	1,475 82	.....
3	1	.....	.....	15	.....	.....	....	1 77	.....	.....	.....	3	....	169 80	132 00	.....
3	.....	.....	.....	4	.....	.....	....	2 78	.....	1	5 00	.....	....	179 84	183 60	.....
12	.....	.....	.....	14	.....	.....	....	7 44	.....	.....	.....	7	....	304 24	331 52	.....
19	.....	.....	.....	81	.....	.....	....	8 06	.....	1	5 00	10	2	728 95	514 64	.....
3	.....	.....	.....	2	.....	.....	....	1 38	.....	2	12 00	4	....	81 80	92 84	.....
3	1	.....	.....	8	.....	.....	....	1 62	.....	.....	.....	2	....	151 41	89 00	.....
4	.....	.....	.....	3	1	12 00	....	1 78	.....	1	5 00	.....	....	83 58	.....	.....
5	1	.....	.....	1	.....	.....	....	1 88	.....	1	7 00	1	....	106 25	134 24	.....
10	.....	.....	1	6	.....	.....	....	4 69	.....	.....	.....	.....	....	178 60	105 90	.....
4	1	.....	2	8	.....	.....	....	.....	.....	.....	.....	.....	....	122 97	.....	.....
11	3	.....	.....	5	.....	.....	....	5 89	.....	.....	.....	.....	....	244 80	208 05	.....
3	.....	.....	.....	3	.....	.....	....	1 41	.....	1	2 00	.....	....	93 20	92 81	.....
2	.....	.....	.....	6	.....	.....	....	1 26	.....	2	9 00	4	....	93 95	105 29	.....
53	1	.....	.....	130	.....	.....	....	.....	230 42	.....	.....	.....	....	3,152 09	2,782 10	.....
14	.....	.....	.....	3	.....	.....	....	.....	.....	.....	.....	1	....	362 42	474 87	.....
2	.....	.....	.....	3	.....	.....	....	.....	.....	.....	.....	.....	....	95 59	.....	6 25
3	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	60 54	64 15	.....
4	.....	.....	.....	13	.....	.....	....	.....	.....	.....	.....	.....	....	232 97	.....	.....
31	15	.....	1	50	.....	.....	....	.....	.....	2	10 00	15	....	1,315 15	888 33	127 27
50	.....	.....	.....	47	.....	.....	....	.....	.....	1	5 00	23	....	1,402 60	832 13	.....
7	1	.....	.....	5	.....	.....	....	.....	.....	.....	.....	.....	....	274 10	.....	.....
3	.....	.....	.....	1	.....	.....	....	.....	.....	.....	.....	.....	....	117 34	.....	.....
60	.....	.....	2	85	.....	.....	....	.....	138 71	5	25 00	7	....	2,693 54	2,619 16	.....
57	.....	.....	.....	22	.....	.....	....	.....	.....	3	15 00	7	1	869 18	421 79	3 44
43	.....	.....	.....	10	.....	.....	....	.....	.....	.....	.....	.....	....	425 33	521 10	.....
80	1	.....	.....	53	.....	.....	....	.....	.....	.....	.....	.....	....	1,373 24	{ 19 91 901 98	.....
98	17	.....	3	77	.....	.....	....	.....	.....	9	50 30	1	....	1,524 42	967 55	3 00

*Part of year only.

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Division.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Victoria	1	7	316 77	.....	.....	.....	.....	489 73	489 73	.....	3
	2	28	1,514 88	.....	.....	.....	.....	466 88	466 88	.....	22
	3	20	778 14	1	36 55	2	.....	306 13	306 13	.....	20
	4	3	181 15	.....	.....	.....	.....	173 20	173 20	.....	2
	5	265	9,040 40	7	549 32	25	.....	3,597 86	3,576 95	20 91	244
	6	11	617 63	.....	.....	.....	.....	421 08	421 08	.....	9
	7	20	530 14	2	53 39	.....	7 5 0	267 69	275 19	.....	19
Waterloo	1	1,036	26,754 20	41	2,818 11	63	62 35	16,632 91	16,558 42	137 84	1,078
	2	197	5,654 49	10	535 27	15	10 00	3,112 05	3,122 05	.....	187
	3	400	12,130 99	17	720 47	99	6 00	6,357 70	6,336 51	27 19	386
	4	49	2,425 06	2	15 03	3	.....	1,650 74	1,650 74	.....	42
	5	25	658 94	1	12 37	2	7 00	543 31	550 31	.....	25
	6	33	1,073 31	3	67 62	1	1 00	756 69	756 69	1 00	31
	7	9	508 75	.....	.....	.....	72 63	90 90	26 90	136 63	7
Welland	1	647	24,529 02	21	1,299 56	112	354 63	19,255 35	18,852 60	402 75	618
	2	28	893 33	5	207 63	5	.....	544 60	544 60	.....	27
	3	154	6,878 40	8	538 92	41	26 15	3,955 69	3,968 72	13 03	137
	4	537	21,344 02	18	1,107 49	24	1,223 12	11,254 31	10,777 96	1,699 47	530
	5	82	3,184 44	7	511 18	4	136 65	1,504 73	1,322 88	318 50	78
	6	152	4,882 73	7	510 66	1	39 20	3,552 25	3,536 06	55 39	142
Wellington	1	651	21,376 86	26	1,759 02	102	74 90	11,381 01	11,059 21	396 70	416
	2	9	245 08	.....	.....	.....	.....	60 60	60 60	.....	8
	3	3	40 75	.....	.....	.....	.....	40 75	40 75	.....	2
	4	78	3,277 99	4	689 87	5	6 00	1,140 90	1,146 90	.....	73
	5	19	1,017 52	2	57 93	.....	.....	577 65	561 72	15 93	15
	6	31	1,105 88	2	85 81	5	37 53	890 26	877 26	50 53	30
	7	48	2,650 78	7	245 64	11	69 94	1,829 49	1,899 43	156 73	29
	8	70	3,267 04	3	373 94	4	373 98	2,398 01	219 78	61 09	.....
	10	53	2,634 13	7	701 22	2	244 88	1,754 47	1,822 23	177 12	45
	11	30	1,565 24	1	256 84	.....	154 22	856 25	940 38	70 09	20
Wentworth	1	1,018	39,528 98	22	1,199 85	47	331 12	14,923 42	14,646 82	607 72	939
	2	189	5,499 52	10	839 76	5	.....	2,641 05	2,641 05	.....	169
	3	29	1,288 71	4	181 16	.....	.....	697 28	697 28	.....	24
	4	35	1,606 05	8	264 11	.....	.....	946 08	946 08	.....	31
	5	54	2,004 61	5	352 18	1	20 00	1,452 52	1,432 56	20 00	51
	7	No	Business	.....	.....	.....	.....	.....	.....	.....	.....
	8	No	Business	.....	.....	.....	.....	.....	.....	.....	.....
	9	1,331	51,436 75	60	3,577 19	67	241 25	22,385 12	22,626 37	599 13	1,263
York	1	3,597	178,873 05	82	4,825 89	234	2,271 16	47,422 61	49,693 77	1,851 78	3,327
	2	39	3,263 66	16	1,041 28	5	49 07	1,583 28	1,632 35	.....	32
	3	68	3,584 67	11	650 23	8	90	926 39	926 39	90	58
	4	146	5,474 78	7	379 58	24	25 30	2,023 66	1,941 09	107 87	136
	5	41	1,553 61	5	228 91	3	120 00	718 04	631 72	206 32	40
	6	114	5,232 99	12	815 64	20	22 45	1,987 86	1,925 01	85 30	104
	7	30	1,972 66	2	84 28	3	260 56	1,273 26	1,254 69	179 13	22
	8	561	22,852 41	24	1,372 75	92	126 91	8,268 73	8,190 82	204 82	517
	9	36	1,828 67	4	206 39	8	10 00	624 06	634 06	.....	32
	10	2,091	100,933 95	57	4,005 99	283	4,596 12	25,202 69	26,519 40	3,279 41	1,938
Grand Totals	339	50,251	2,009,827 98	2,489	133,829 73	5,176	39,639 12	964,444 56	950,450 43	49,457 43	45,418

A.—Concluded.

to the 31st day of December, A.D. 1918, inclusive, shewing.—Concluded.

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of Section 43, D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
1	.....	.....	.....	3	..	.....	....	40	.....	.....	.....	.....	....	17 35	15 91	.....
6	.....	.....	.....	5	..	.....	....	1 70	.....	.....	.....	.....	....	54 34	45 24	.....
2	.....	.....	.....	4	..	.....	....	89	.....	.....	.....	.....	....	55 44	22 95	.....
1	.....	.....	.....	.....	..	.....	....	31	.....	.....	.....	.....	....	18 32	14 05	.....
21	.....	.....	.....	80	..	.....	....	8 79	.....	.....	.....	2	....	564 85	341 41	.....
2	.....	.....	.....	.....	..	.....	....	71	.....	.....	.....	.....	....	24 30	13 30	.....
1	1	.....	.....	5	..	.....	....	46	.....	.....	.....	.....	....	46 75	.....	.....
25	3	.....	.....	334	..	.....	....	21 19	39 88	.....	.....	30	....	2,199 50	979 86	.....
10	.....	.....	.....	66	..	.....	....	4 93	.....	.....	.....	1	....	455 80	295 30	.....
14	.....	.....	.....	146	..	.....	....	8 99	.....	1	10 00	18	....	1,035 10	362 35	.....
3	.....	.....	2	4	..	.....	....	1 98	.....	.....	.....	1	....	119 80	148 55	.....
.....	.....	1	.....	2	..	.....	....	39	.....	.....	.....	1	....	68 85	25 40	.....
2	.....	.....	.....	8	..	.....	....	1 04	.....	.....	.....	.....	....	88 80	93 80	.....
2	.....	.....	.....	2	..	.....	....	62	.....	2	10 00	.....	....	27 52	3 70	.....
25	.....	.....	.....	144	1	12 00	1	24 35	.....	5	40 00	23	....	2,006 65	1,126 09	.....
1	.....	.....	.....	8	..	.....	....	67	.....	.....	.....	3	....	93 70	96 80	.....
17	.....	.....	1	28	..	.....	....	7 31	.....	1	10 00	6	....	438 75	597 00	.....
49	.....	.....	.....	121	..	.....	....	21 39	.....	1	10 00	3	....	1,322 16	1,406 45	75
4	.....	.....	.....	8	..	.....	....	2 59	.....	1	5 00	2	....	217 00	.....	.....
10	.....	.....	.....	43	..	.....	....	1 81	.....	.....	.....	.....	....	333 95	180 00	.....
39	.....	.....	.....	196	..	.....	....	20 25	.....	.....	.....	24	2	1,702 35	{ 602 13 { 378 30	.....
1	.....	.....	.....	4	..	.....	....	28	.....	.....	.....	.....	....	21 53	12 75	.....
.....	.....	.....	.....	.....	..	.....	....	03	.....	.....	.....	.....	....	6 68	.....	.....
5	.....	.....	.....	15	..	.....	....	2 96	.....	.....	.....	.....	....	2 35	.....	.....
4	.....	.....	.....	4	..	.....	....	1 27	.....	.....	.....	.....	....	57 63	49 55	.....
1	.....	.....	.....	6	..	.....	....	88	.....	.....	.....	1	....	70 55	69 50	.....
11	.....	.....	.....	8	..	.....	....	2 99	.....	.....	.....	.....	....	159 20	158 69	.....
.....	.....	.....	.....	10	..	.....	....	3 61	.....	.....	.....	1	....	235 90	.....	8 13
7	3	.....	.....	11	..	.....	....	2 96	.....	.....	.....	.....	....	155 45	123 60	.....
6	.....	.....	.....	3	..	.....	....	2 16	.....	.....	.....	1	....	94 55	65 65	7 00
50	33	.....	1	174	..	.....	....	34 65	121 52	4	30 00	3	....	2,607 62	1,429 24	.....
7	2	.....	2	46	..	.....	....	5 10	.....	1	10 00	.....	....	363 23	.....	.....
5	9	.....	.....	5	..	.....	....	1 16	.....	.....	.....	.....	....	95 27	89 68	.....
4	2	.....	1	2	..	.....	....	1 62	.....	.....	.....	.....	....	103 65	.....	.....
4	.....	.....	.....	7	..	.....	....	2 02	.....	.....	.....	.....	....	119 55	.....	.....
.....	.....	.....	.....	.....	..	.....	....	.....	.....	.....	.....	.....	....	.....	.....	.....
.....	.....	.....	.....	.....	..	.....	....	.....	.....	.....	.....	.....	....	.....	.....	.....
60	27	.....	1	267	2	23 00	....	44 12	248 93	8	75 00	8	....	3,244 65	1,671 25	.....
270	.....	.....	8	448	2	22 00	....	152 61	1,764 52	10	50 00	139	1	7,786 30	5,990 84	19 49
7	.....	.....	.....	1	..	.....	....	2 56	.....	.....	.....	1	....	124 90	81 00	.....
9	2	.....	1	13	4	60 00	....	3 56	.....	.....	.....	2	1	208 83	182 51	.....
8	3	.....	1	24	..	.....	....	4 89	.....	.....	.....	10	....	328 35	391 90	.....
1	.....	.....	.....	7	..	.....	....	1 21	.....	.....	.....	.....	....	118 80	85 40	.....
7	.....	.....	.....	15	..	.....	....	5 22	.....	.....	.....	4	....	17 65	227 75	.....
8	.....	.....	.....	1	3	43 60	....	2 25	.....	.....	.....	.....	....	91 75	.....	.....
44	17	.....	2	114	..	.....	....	21 05	.....	2	15 00	29	....	1,026 95	275 00	10 00
3	.....	.....	.....	2	..	.....	....	1 81	.....	.....	.....	.....	....	69 70	101 70	.....
137	15	.....	12	233	1	12 00	....	89 73	705 60	6	30 00	83	....	4,852 14	4,342 74	38 99
3,126	412	35	91	9,723	56	708 80	....	1,464 24	4,252 02	145	977 30	1,072	93	.....	.....	309 13

TABLE B.

LIST of Division Court clerks, their post office address, their county or district and number of division in which their Courts are situated, for the Province of Ontario, up to the 31st December, 1918, inclusive. (Lists corrected up to date of printing.)

County and District.	No. of Division.	Clerk.	Post office address.
Algoma	1	Jno. Munnock	Sault Ste. Marie
	2	T. Sullivan	Bruce Mines
	3	Thos. Dodds	Thessalon
	6	W. F. Adams	Richard's Landing
	7	J. A. Hawkins	Blind River
Brant	1	James C. Spence	Brantford
	2	Jas. Smiley	Paris
	3	A. E. Green	St. George
	4	W. F. Miles	Burford
	5	Walter E. Hooker	Scotland
Bruce	1	N. Crawford	Walkerton
	2	John K. McLean	Teeswater
	3	A. G. Macintyre	Kincardine
	4	J. C. Gibson	Paisley
	5	J. A. Chapman	Port Elgin
	6		Tiverton
	7	J. R. Vandusen	Tara
	8	J. H. Fielding	Wiarton
	9	Angus Martyn	Ripley
	10	John Pettigrew	Lion's Head
	11	W. J. Little	Lucknow
	12	C. E. Biehn	Chesley
Carleton	1	C. A. E. Blanchet	Ottawa
	2	Wm. McElroy	Richmond
	3	Jas. H. Wilson, Jr.	Carp
	4	A. S. Russell	Galetta
	5	W. H. Leech	North Gower
	6	T. A. Hicks	Metcalf
	7	W. A. Mason	Ottawa
Dufferin	1	J. M. Bennett	Orangeville
	2	W. H. Lamon	Shelburne
	3	John Ferris	Stanton
	4	Robt. Orr	Mono Mills
	5	W. A. Wansborough	Grand Valley
Elgin	1	E. C. Monteith	Aylmer
	2	John McIntyre	St. Thomas
	3	John McIntyre	St. Thomas
	4	M. S. Smith	Dutton
Essex	1	Jos. White	Sandwich
	2	W. A. McCormick	Amherstburg
	3	Geo. Pearce	Kingsville
	4	C. Bell	Harrow
	5	*C. A. Edsall	Leamington
	6	H. Taylor	Belle River
	7	J. D. A. Deziel	Windsor
	8	Wm. Laing	Essex
	9	A. J. Brown	Comber
	10	L. D. Warner	Pelee Island

*Deputy Clerk

List of Division Court Clerks.—Continued.

County and District.	No. of Division.	Clerk.	Post office address.
Frontenac	1	Thos. Lambert	Kingston
	3	D. W. Lake	Sydenham
	4	H. McMullen	Verona
	5	J. A. Sharpe	Sunbury
	6	E. B. Buell	Sharbot Lake
	7	W. McGregor	Arden
Grey	1	N. B. Horton	Owen Sound
	2	Archibald Davidson	Durham
	3	*A. G. Bright	Meaford
	4	W. L. Tyson	Clarksburg
	5	W. J. Bellamy	Flesherton
	6	G. W. Collins	Chatsworth
	7	John Taylor	Hanover
	8	Richard L. Stephen	Markdale
Haldimand	1	James McGregor	Caledonia
	2	B. Humphrey	Cayuga
	3	T. Armour	Dunnville
	4	C. E. Bourne	Jarvis
	5	Robert E. Johnson	Canfield R. R. No. 2
Haliburton	1	Geo. A. Rogers	Minden
	2	G. Bemister	Haliburton
	3	A. W. Fleming	Wilberforce
	4	E. B. Speers	Dorset
Halton	1	Wm. Panton	Milton
	2	W. S. Savage	Oakville
	3	J. A. Tracy	Georgetown
	4	Geo. Agnew	Acton
	5	Wm. Fraser	Campbellville
	6	Thos. Cooke	Burlington
Hastings	1	F. M. Clarke	Belleville
	2	W. Greer	St. Ola
	3	L. E. Mills	Shannonville
	4	F. A. Bartlett	Tweed
	5	Thomas G. Clute	Stirling
	6	Dennis Gillen	Madoc
	7	R. M. Jack	Deseronto
	9	C. W. London	Trenton
	10	J. C. Bowen	Marmora
	11	W. J. Douglas	Maynooth
	12	J. McCaw	Bancroft
Huron	1	James Yates	Goderich
	2	J. C. Greig	Seaforth
	3	H. T. Rance	Clinton
	4	S. Wilson	Brussels
	5	R. N. Creech	Exeter
	6	Nat Whyard	Dungannon
	7	Jno. Tippett	Bayfield
	8	J. G. Stewart	Wingham
	9	Thomas Brown	Wroxeter
	10	W. L. Siebert	Zurich
	11	Thos. Trevethick	Crediton
	12	Jos. Stothers	Blyth

*Deputy Clerk

List of Division Court Clerks.—Continued.

County and District.	No. of Division.	Clerk.	Post office address.
Kenora	1	O. Partington	Kenora
	2	J. D. Aaron	Wabigoon
	3	J. E. Gibson	Dryden
	4	J. E. Cole	Sioux Lookout
Kent	1	W. B. Wells	Chatham
	2	W. E. Bottoms	Ridgetown
	3	H. E. Wells	Dresden
	4	J. C. Whittington	Blenheim
	5	Charles B. Jackson	Wallaceburg
	6	Jos. Dillon	Bothwell
	7	Jos. Wilson	Tilbury
Lambton	1	A. F. Wade	Sarnia
	2	Wm. McLeay	Watford
	3	Jas. McIntyre	Florence
	4	Wm. W. Stover	Sombra
	5	Thomas L. Jones	Forest
	6	W. C. Tudor	Thedford
	8	W. G. Fraser	Petrolea
	9	Thos. Allison	Alvinston
Lanark	1	R. Jamieson	Perth
	2	Robt. Beatty	Lanark
	3	A. R. G. Peden	Carleton Place
	4	R. Craig	Smith's Falls
	5	P. C. Dowdall	Almonte
Leeds and Grenville	1	I. J. Mansell	Brockville
	2	C. Plumb	Prescott
	3	S. McCammon	Gananoque
	4	S. H. Guest	Kemptville
	5	M. G. Corbett	Merrickville
	6	N. L. Phelps	Delta
	7	Jas. Edgar	Toledo
	8	Ed. Wright	Newboro'
	9	E. J. Purcell	Athens
	10	M. Maguire	Spencerville
	11	John Haley	North Augusta
	12	Charles Tennant	Mallorytown
Lennox and Addington	1	A. Knight	Napanee
	2	Fred W. Armstrong	Bath
	3	Joseph B. Allison	Adolphustown
	4	Jno. H. Patterson	Newburgh
	5	Miss B. Cox	Enterprise
	6	Robt. Bennett	Odessa
	7	James Aylesworth	Tamworth
	8	A. A. Dafoe	Flinton
	9	C. P. Stein	Denbigh
Lincoln	1	Samuel Shearer	Niagara-on-the-Lake
	2	A. H. Trapnell	St. Catharines
	3	J. M. Martin	Smithville
	4	W. D. Fairbrother	Beamsville
	5	*Mrs. J. G. Johnson	Grimsby
Manitoulin	1	C. C. Platt	Gore Bay
	2	David McGilvery	Little Current
	3	.....	Manitowaning

* Deputy Clerk

List of Division Court Clerks.—Continued.

County or District.	No. of Division.	Clerk.	Post office address.
Middlesex	1	Chas. R. M. Graham	London
	2	Wm. J. McRoberts	Parkhill
	3	R. H. Collins	Lucan
	4	J. H. Matthews	Delaware
	5	Chas. George	Glencoe
	6	John H. McIntosh	Strathroy
	7	F. V. Chittick	Dorchester Station
	8	Walter R. Westlake	London, R. R. No. 2
	9	F. H. Whetter	London
Muskoka	1	I. B. Aulph	Bracebridge
	2	W. N. Moody	Gravenhurst
	3	A. R. Corbett	Huntsville
Nipissing	1	Mrs. E. Lefave	Sturgeon Falls
	2	C. A. Fink	Mattawa
	3	M. W. Flannery	North Bay
Norfolk	1	E. E. Collins	Simcoe
	2	J. F. McKinnon	Waterford
	3	Hy. McKnight	Teeterville
	4	*Mrs. Arthur Gerhard	Delhi
	5	M. J. McColl	Vittoria
	6	A. P. Barrett	Port Rowan
	7	Watson Park	Fairground
	8	W. F. Tibbetts	Port Dover
Northumberland and Durham	1	John Moorecraft	Bowmanville
	2	L. B. Davidson	Newcastle
	3	Thos. A. Thompson	Port Hope
	4	W. S. Given	Millbrook
	5	J. C. Rosevear	Cobourg
	6	E. H. Pratt	Grafton
	7	H. S. Keyes	Colborne
	8	B. C. H. Becker	Brighton
	9	P. S. Ewing	Warkworth
	10	D. Teal	Wooler
	11	S. J. Fisher	Campbellford
Ontario	1	Miss E. L. McDonell	Whitby
	2	M. Gleeson	Greenwood
	3	J. W. Burnham	Port Perry
	4	R. J. Moore	Uxbridge
	5	Thos. Foster	Cannington
	6	C. A. Patterson	Beaverton
	7	D. Leonard	Atherly
Oxford	1	V. L. Francis	Woodstock
	2	J. D. Cowan	Drumbo
	3	E. J. Cody	Embro
	4	M. L. Bushell	Norwich
	5	Neil G. Gunn	Ingersoll
	6	John C. Ross	Tillsonburg
	7	W. S. Russell	Tavistock

* Deputy Clerk.

List of Division Court Clerks.—Continued.

County or District.	No. of Division.	Clerk.	Post office address.
Parry Sound	1	C. Sarney	Parry Sound
	2	John Fletcher	McKellar
	3	Jno. Knowles	Rosseau
	4	Fred Metcalf	Burk's Falls
	5	Harry Snuggs	Magnetawan
	6	*Mrs. T. J. Williams	Powassan
	7	John Harper	Sundridge
Peel	1	John Clarke	Brampton
	2	J. K. Morley	Cooksville
	3	M. C. Hillock	Caledon
	4	Robt. Matson	Palgrave
Perth	1	D. B. Burritt	Stratford
	2	J. Dougherty	Mitchell
	3	Wm. Moyes	St. Mary's
	4	Jos. Thompson	Shakespeare
	5	Wm. Zimmerman	Milverton
	6	Wm. Bright	Listowel
Peterborough	1	J. W. Miller	Peterborough
	2	J. L. Squire	Norwood
	3	W. Sherin	Lakefield
	4	Miss A. M. Booth	Apsley
	5	E. Fennell	Havelock
	6	W. D. Edwards	Keene
Prescott and Russell	1	E. A. Johnson	L'Orignal
	2	P. S. Paquette	Vankleek Hill
	3	Napoleon Labrosse	St. Eugene
	4	D. M. Viau	Plantagenet
	5	H. D. Cameron	Cumberland
	6	A. Carson	Russell
	7	J. A. D. Landriault	Hawkesbury
	8	A. Groulx	Fournier
	9	F. W. Langrell	Alfred
	10	N. A. Campbell	Rockland
	11	Peter Stewart	South Indian
Prince Edward	1	Fred Slavin	Picton
	2	J. McQuoid	Milford
	3	Charles H. Wright	Demorestville
	4	W. H. C. Roblin	Ameliasburg
	5	H. A. Jolley	Wellington
	6	C. H. Saylor	Bloomfield
	7	A S. Burr	Consecon
	8	B. E. Harrison	Waupoos
Rainy River	1	W. H. Elliott	Fort Frances
	2		Emo
	3	D. K. McGregor	Rainy River
Renfrew	1	J. C. L. White	Pembroke
	2	L. O. Christmann	Beachburg
	3	M. Devine	Renfrew
	4	John R. Tierney	Arnprior
	5	Jno. Chanonhouse ,	Eganville
	6	J R. Warren	Cobden
	7	P. J. Harrington	Killaloe Station

* Deputy Clerk.

List of Division Court Clerks.—Continued.

County or District.	No. of Division	Clerk.	Post office address.
Simcoe	1	Geo. Wilson	Barrie
	2	R. E. Stevenson	Bradford
	3	Jos. Wright	Beeton
	4	A. M. Knight	Collingwood
	5	T. C. Craig	Craighurst
	6	F. Webber	Orillia
	7	R. Carter	New Lowell
	8	J. E. Addis	Alliston
	9	W. J. Martin	Penetanguishene
	10	H. Gover	Coldwater
Stormont, Dundas & Glengarry	1	J. A. B. McLennan	Williamstown
	2	S. McDonell	Alexandria
	3	.	Cornwall
	4	Geo. Sampson	Aultsville
	5	Jas. N. Eastman	Morrisburg
	6	Jas. Collison	Iroquois
	7	M. J. Cleland	South Mountain
	8	J. W. Carr	Finch
	9	J. R. McLeod	Dalhousie Station
	10	W. G. Bolster	Chesterville
	11	A. O. Miller	Avonmore
	12	D. P. McDougall	Dominionville
Sudbury	1	J. K. McLennan	Sudbury
	2	J. A. Bastien	Chelmsford
	3	J. C. McMillan	Webbwood
	4	S. Soufriene	Warren
	5	*Mrs. M. Lyness	Chapleau
Temiskaming	1	Paul A. Cobbold	Haileybury
	2	F. W. Ferguson	Liskeard
	3	Samuel Errett	Englehart
	4	H. E. Sheppard	Elk Lake
	5	E. H. Hill	South Porcupine
	6	S. L. Bradley	Cochrane
	7	Jno. Cole	Matheson
Thunder Bay	1	R. E. Mitchell	Port Arthur
	3	G. H. Coo	Fort William
Victoria	1	Arch. Campbell	Woodville
	2	J. L. Arnold	Fenelon Falls
	3	G. W. Taylor	Bobcaygeon
	4	W. H. Kennedy	Omemee
	5	J. P. Ryley	Lindsay
	6	J. B. Weldon	Oakwood
	7		Victoria Road
Waterloo	1	Fred. Rohleder	Kitchener
	2	W. Heise	Preston
	3	Edward D. Wilkins	Galt
	4	F. H. McCallum	New Hamburg
	5	C. W. Parsill	Linwood
	6	Wm. H. Winkler	St. Jacob's
	7	A. E. Watson	Ayr

*Deputy Clerk

List of Division Court Clerks.—Concluded.

County or District.	No. of Division.	Clerk.	Post office address.
Welland	1	J. F. Best	Welland
	2	Joseph Henderson	Marshville
	3	Jos. Clark	Ridgeway
	4	Jos. G. Cadham	Niagara Falls Sth.
	5	D. J. C. Munro	Thorold
	6	D. O. Evans	Port Colborne
Wellington	1	Thos. J. Day	Guelph
	2	Wm. Nicoll	Morriston
	3	Robt. Scott	Rockwood
	4	John Brownridge	Fergus
	5	A. J. Lindsay	Erin
	6	Henry Clark	Elora
	7	John Lunz	Drayton
	8	R. T. Smith	Arthur
	10	C. L. Eady	Harriston
	11	J. C. Wilkes	Mount Forest
Wentworth	1	C. J. Jones	Hamilton
	2	F. D. Suter	Dundas
	3	J. C. Medlar	Waterdown
	4	E. Dayman	Lynden
	5	J. C. Moore	Stoney Creek
	7	G. T. Neale	Glanford
	8	Thomas Murphy	Binbrook
	9	C. H. Peebles	Hamilton
York	1	A. McL. Howard	Toronto
	2	Robert J. Corson	Markham
	3	Thos. F. McMahon	Richmond Hill
	4	K. N. Robertson	Newmarket
	5	F. G. Tremayne	Sutton West
	6	W. H. Taylor	Aurora
	7	E. W. Brown	Woodbridge
	8	John Hamshaw	West Toronto
	9	J. H. Richardson	West Hill
	10	E. H. Duggan	Toronto

TABLE C.

List of Division Court Bailiffs, their Post Office Address, the County or District and Number of Division in which their Courts are situated, for the Province of Ontario, up to 31st December, 1918, inclusive. (Lists corrected up to date of printing.)

County or District.	No. of Division.	Bailiff.	Post office address.
Algoma	1	T. J. Bowers	Sault Ste. Marie
	2	O. A. Willoughby	Bruce Mines.
	3	Neil Currie	Thessalon
	6	A. Kitchen	Carterton, St. Jos. Is.
	7	Robt. George	Blind River
Brant	1	Jno. M. Dyckman	Brantford
	2	J. W. Fasken	Paris
	3	J. H. Cornell	St. George
	4	Wm. Johnston	Burford
	5	J. R. Smith	Scotland
Bruce	1	Ezra Briggs	Walkerton
	2	Jas. Donaghy	Teeswater
	3	George G. Collins	Kincardine
	4	Alex. Fraser	Paisley
	5	J. J. Chapman	Port Elgin
	6	.....	Tiverton
	7	Robt. Mill	Tara
	8	J. Hunt	Wiarton
	9	.....	Ripley
	10	A. C. Bridge	Lion's Head
	11	R. J. Moore	Lucknow
	12	Jno. Beatty	Chesley
Carleton	1	E. Lavoie	Ottawa
		E. T. Van Nierop	Ottawa
	2	Jos. Binnington	Stapleton
	3	Wm. Falls	Carp
	4	F. Johnson	Galetta
	5	Wesley Hicks	Kars
	6	.....	Metcalfe
	7	A. Wilson	Ottawa
Dufferin	1	Jos. Hughes	Orangeville
	2	John Reburn	Shelburne
	3	Jno. Armstrong	Earnscliffe
	4	Jos. Hughes	Orangeville
	5	J. I. Buchanan	Grand Valley
Elgin	1	D. T. Augustine	Aylmer
	2	Geo. Smiley	St. Thomas
	3	Geo. Smiley	St. Thomas
	4	A. J. Branton	Dutton

List of Division Court Bailiffs, etc.—Continued.

County or District.	No. of Division.	Bailiff.	Post office address.
Essex	1	Alois Master	Sandwich
	2	S. Reneau	Amherstburg
		J. H. Hirons	
	3	I. N. Lucas	Kingsville
	4	T. R. Quick	Harrow
	5		Leamington
	6		Belle River
	7	F. St. Louis	Windsor
	8	James Johnston	Essex
	9	Leon Souchereau	Stoney Point
	10		Pelee
Frontenac	1	Chas. G. Clarke	Kingston
	3	P. J. Trousdale	Sydenham
	4	E. A. Tallen	Verona
	5	E. F. Dennee	Inverary
	6	W. Thomlison	Sharbot Lake
	7	John E. Hays	Arden
Grey	1	R. G. Gordon	Owen Sound
	2	Wm. Sharp	Durham
	3	W. H. Arthur	Meaford
	4	Geo. Mitchell	Clarksburg
	5	John Wright, Jr.	Flesherton
	6	James Dudgeon	Chatsworth
	7	F. Heimbecker	Hanover
	8	Wm. Hutchinson	Markdale
Haldimand	1	James Thorburn	Caledonia
	2	L. Young	Cayuga
	3	Wm. McIndoe	Dunnville
	4	Geo. A. Irwin	Jarvis
	5	Harvey Ricker	Canboro
Haliburton	1	W. G. Archer	Minden
	2		Haliburton
	3	J. M. Pickens	Ursa
	4		Dorset
Halton	1	E. G. Paige	Milton
	2		Oakville
	3	Wm. Ward	Georgetown
	4	John Lawson	Acton
	5		Campbellville
	6	A. Cartwright	Burlington
Hastings	1	Joshua Duffin	Belleville
		Louis Soule	Belleville
	2	Robt. Casement	St. Ola
	3	A. A. Burtt	Shannonville
	4	J. E. Johnston	Tweed
	5	Jas. Tanner	Stirling
	6	C. St. Charles	Madoc
	7		Deseronto
	9	H. Mumford	Trenton
	10	O. R. Jones	Marmora
	11	John Perry	Maynooth
	12	R. Robinson	Bancroft

List of Division Court Bailiffs, etc.—Continued.

County or District.	No. of Division.	Bailiff.	Post office address.
Huron	1	O. L. Sturdy	Goderich.
	2	Fred Welsh	Seaforth.
	3	Robt. Welsh	Clinton.
	4	Jno. Long	Brussels.
	5	C. S. Sanders	Exeter.
	6	James Mallough	Dungannon.
	7	Thomas W. Cameron	Bayfield.
	8	G. A. Phippen	Wingham.
	9	G. E. Town	Wroxeter.
	10	C. Eilber	Zurich.
	11	Eli Lawson	Crediton.
	12	Richard Somers	Blyth.
Kenora	1	H. C. King	Kenora.
	2	Ira J. Wilde	Wabigoon.
	3	Ira J. Wilde	Dryden.
	4	G. H. Fanning	Sioux Lookout
Kent	1	Charles J. Moore	Chatham.
		A. Wells	Chatham.
	2	J. N. Wilson	Ridgetown.
	3	A. Woods	Dresden.
	4	H. B. Marshall	Blenheim.
	5	Nelson Seed	Wallaceburg.
	6	John Eachran	Thamesville
	7	Isaac Cowan	Tilbury
Lambton	1	Rich. Macdonald	Sarnia.
	2	J. F. Elliott	Watford.
	3	Wm. Lindsay	Florence.
	4	N. Cornwall	Sombra.
	5	Joseph Burney	Forest.
	6	Jno. Patching	Thedford.
	8		Petrolea.
	9	Jno. A. Cummings	Alvinston.
Lanark	1	P. J. Lee	Perth.
		Robt. Burris	Perth.
	2	Jas. Darou	Lanark.
	3	H. Wilson	Carleton Place.
	4	G. W. Patterson	Smith's Falls.
	5	F. Coulter	Almonte.
Leeds and Grenville	1	Ed. Young	Brockville.
		R. Stratton	Brockville.
	2	E. B. Rickey	Prescott.
	3	Thos. Baker	Gananoque.
	4	Michael Sweeney	Kemptville.
	5	Jno. Wilson	Merrickville.
	6	J. W. Russell	Delta.
	7	W. G. Richards	Frankville.
	8	E. J. Leech	Newboro.
		J. Steele	Westport.
	9	H. C. Phillips	Athens.
	10	Jas. P. Lawrence	Spencerville.
	11	W. H. Love	North Augusta.
	12	W. I. Mallory	Mallorytown.

List of Division Court Bailiffs, etc.—Continued.

County or District.	No. of Division.	Bailiff.	Post office address.
Lennox and Addington	1	Geo. Greer	Napanee
	2	.....	Bath
	3	R. H. Hawley	Dorland
	4	.....	Newburgh
	5	H. W. Wager	Enterprise
	6	Geo. Watts	Odessa
	7	P. F. Carscallen	Tamworth
	8	Geo. Sedore	Flinton
	9	Ed. Inwood	Denbigh
Lincoln	1	E. W. Anderson	Niagara-on-the-Lake
	2	Frank Secord	St. Catharines
	3	A. D. Lacey	Smithville
	4	Jos. Grobb	Beamsville
	5	H. C. Kelson	Grimsby
Manitoulin	1	Thos. Griffith	Gore Bay
	2	John Ramesbottom	Little Current
	3	D. Payette	Tehkummah.
Middlesex	1	R. Annett	London
	2	J. Hall	Parkill
	3	Chas. Sproal	Lucan
	4	Henry Eldidge	Delaware
	5	James Poole	Glencoe
	6	T. F. Hawkin	Strathroy
	7	Geo. Chittick	Dorchester Station
	8	W. C. Westlake	R.R. No. 5, London
	9	A. H. Yerex	London
Muskoka	1	F. K. Sander	Bracebridge
		W. E. Massey	Port Carling
	2	Chas. Richardson	Gravenhurst
	3	H. G. Harper	Huntsville
Nipissing	1	H. Kinch	Sturgeon Falls
	2	Aime Jodouin	Mattawa
		.....	Whitney
	3	J. W. Sewell	North Bay
Norfolk	1	L. H. Barber	Simcoe
	2	M. L. Boughner	Waterford
	3	J. H. Boyce	Venessa, R. R. No. 3
	4	W. J. Herron	Courtland
	5	Chas. A. Dunkin	Vittoria
	6	Plewis Pierce.	Port Rowan
	7	R. Scruton	Kinglake
	8	G. F. Holden	Port Dover
Northumberland and Durham	1	M. Munday	Bowmanville
	2	Jas. Coleman	Newcastle
	3	R. E. Smith	Port Hope
	4	George Wallace	Millbrook
	5	S. B. Minifie	Cobourg, R. R. No. 4
	6	A. C. Henan	Grafton
	7	Wm. Usher	Colborne
	8	Jno. A. Marshall	Brighton
	9	Geo. Shinkle	Warkworth
	10	F. Ellis	Wooler
	11	G. McComb	Campbellford

List of Division Court Bailiffs, etc.—Continued.

County or District.	No. of Division.	Bailiff.	Post office address.
Ontario	1	F. Rogers	Whitby
	2	S. H. Stevenson	Brougham
	3	Jos. Baird	Manchester
	4	J. Steiner	Uxbridge
	5	Lachlin McBain	Cannington
	6	Wm. Dobson	Beaverton
	7		Brechin
Oxford	1	Benj. Hobson	Woodstock
	2	A. W. Burgess	Drumbo
	3	J. A. McKay	Embro
	4	Arthur Catton	Norwich
	5	John Haycock	Ingersoll
	6	E. A. Ellis	Tillsonburg
	7	Jos. Dewal	Tavistock
Parry Sound	1	J. F. Fenton	Parry Sound
	2		McKellar
	3	Wm. Atkinson	Rosseau
	4	H. Stewart	Burk's Falls
	5	S. Walton	Magnetawan
	6	Jno. Lang	Powassan
	7	Jno. Willoughby	Sundridge
Peel	1	Robt. Taylor	Brampton
	2	Wm. H. Rutledge	Cooksville
	3	D. McArthur	Caledon
	4	Thos. Barons	Bolton
Perth	1	D. W. Forbes	Stratford
	2	John Coppin	Mitchell
	3	Wm. Billings	St. Mary's
	4	Jno. S. Gabel	Shakespeare
	5	Chas. Welker	Milverton
	6	R. Woods	Listowel
Peterborough	1	S. R. Pearson	Peterborough
	2	F. J. Stewart	Norwood
	3	*W. J. Hendron	Lakefield
	4		Apsley
	5	F. McAdams	Havelock
	6	H. McLachlan	Keene
Prescott and Russell	1	S. W. Wright	L'Orignal
	2	A. A. McRae	Vankleek
	3	E. Labrosse	St. Eugene
	4	J. A. Therrien	Curran
	5		Cumberland
	6	Thos. Yonge	Russell
	7	D. Millette	Hawkesbury.
	8	Ira Gates	Fournier
	9	H. Larocque	Alfred
	10	John A. Dent	Rockland
		Moise Laviolette	Clarence Creek
	11	A. L. Macdonald	South Indian

*Deputy Bailiff.

List of Division Court Bailiffs, etc.—Continued.

County or District.	No. of Division.	Bailiff.	Post office address.
Prince Edward	1	D. Hoover	Picton
	2	G. N. Ostrander	Milford
	3	George Farrell.	Demorestville
	4		Ameliasburg
	5	W. E. H. Young	Wellington
	6	J. W. Branscombe	Bloomfield
	7	Herman W. Weeks	Consecon
	8	E. A. Williams	Waupoos
Rainy River	1	J. B. Moshier	Fort Frances
	2	Jno. Shiels	Emo
	3		Rainy River
Renfrew	1	Geo. McDonald	Pembroke
	2		Beachburg
	3	C. Miller	Renfrew
	4	John Warnock, jr.	Arnprior
	5	Wm. Luloff	Eganville
	6	E. Olmstead	Cobden
	7	W. L. Brisco	Killaloe Sta
Simcoe	1	John Weymouth	Barrie
	2	W. Simpkin	Bradford
	3	D. W. Watson	Beaton
	4	R. Moulding	Collingwood
	5	Ed. Corlett	Hillsdale
	6	H. Perryman	Orillia
	7	Wm. Switzer	New Lowell
	8	John R. Arnold	Alliston
	9	Ed. E. J. Hewson	Penetanguishene
	10	G. A. Abbott	Coldwater
Stormont, Dundas and Glengarry	1	John Burgess	Williamstown
	2	Jas. Kerr	Alexandria
	3	J. P. Denneny	Cornwall
	4	J. P. Ferguson	Osnabruck
	5	Jacob Hopper	Morrisburg
	6	C. Larabee	Iroquois
	7	E. Bush	Hallville
	8	A. McIntosh	Finch
	9		Dalhousie
	10	J. W. Bogart	Moerwood
	11	Chas. W. Kahala	Avonmore
	12	Donald J. Robertson	Maxville
Sudbury	1	C. Gravelle	Sudbury
	2	L. J. Groulx	Chelmsford
	3	Jno. E. McLandress	Webbwood
	4	O. Sequin	Warren
	5	*H. G. Coleman	Chapleau
Temiskaming	1	*H. E. Blackwell	Haileybury
	2	J. H. Brown	New Liskeard
	3		Englehart
	4	*C. McKenzie	Elk Lake
	5	H. Warren	South Porcupine
	6	R. Williams	Cochrane
	7	G. Gumbill	Matheson

*Deputy Bailiff

List of Division Court Bailiffs, etc.—Concluded.

County and District.	No. of Division.	Bailiff.	Post office address.
Thunder Bay	1	W. H. Nelson	Port Arthur
	1	A. Linsdell	Schreiber
		.....	Nipigon
	3	H. Johnston	Fort William
Victoria	1	S. Dumond	Woodville
	2	H. W. Hearns	Fenelon Falls
	3	N. Garlick	Bobcaygeon
	4	W. R. McQuade	Omemee
	5	J. W. Wallace	Lindsay
	6	Wm. J. McCullough	Oakwood
	7	.....	Kirkfield
Waterloo	1	A. A. Moyer	Kitchener
	2	W. A. Bolduc	Preston
	3	Levi Bawtinheimer	Galt
	4	E. Scherer	New Hamburg
	5	H. Holle	Hawkesville
	6	H. Holle	Hawkesville
	7	J. H. Little	Ayr
Welland	1	J. C. Nixon	Welland
	2	Jno. Haymes	Marshville
	3	Jno. R. Huffman	Ridgeway
	4	S. B. Bedell	Niagara Falls
	5	.....	Thorold
	6	E. Minor	Port Colborne
Wellington	1	Jno. Ogg	Guelph
	1	Wm. Young	Guelph
	2	Jno. Ogg	Guelph
	3	.....	Eramosa
	4	.....	Fergus
	5	J. J. Still	Erin
	6	J. W. Love	Elora
	7	Wm. Richards	Drayton
	8	R. Stirling	Arthur
	10	Ed. Johnson	Clifford
	11	Thos. Ryan	Mount Forest
Wentworth	1	Jas. Bryers	Hamilton
	2	Wm. McNeilly	Dundas
	3	.....	Waterdown
	4	Wm. McNeilly	Troy
	5	.....	Stoney Creek
	7	Jas. Thompson	Binbrook
	8	Jas. Thompson	Binbrook
	9	J. A. Atkinson	Hamilton
York	1	Chas. Synge	Toronto
	2	R. Welsh	Markham
	3	G. T. Allison	Richmond Hill
	4	P. Trivett	Newmarket
	5	T. A. Sheppard	Sutton
	6	W. H. Machell	Aurora
	7	Thos. Rowntree	Woodbridge
	8	W. J. Irwin	West Toronto
	9	*Wm. Heron	West Hill
	10	Frank Woods	Toronto

*Deputy Bailiff

TABLE D.

DIVISION COURTS, LIMITS OF THE RESPECTIVE DIVISIONS IN THE PROVINCE OF ONTARIO, AND JUDICIAL OFFICERS.

ALGOMA.

F. Stone, Judge, Sault Ste. Marie.

Hall, J.J., Sault Ste. Marie.

G. W. Goodwin, Crown Attorney and C.P., Sault Ste. Marie.

1.—Bounded west by Thunder Bay District, 85th parallel of west longitude and east by Bar River, including all the islands in front.

2.—Bounded west by Bar River and east by the westerly boundary of the Townships of Thessalon, Kirkwood, Bridgeland, Houghton and Otter, and by said boundary line of the said last five-named townships produced northerly.

3.—Bounded west by the westerly boundary of the Townships of Thessalon, Kirkwood, Bridgeland, Houghton and Otter, and the boundary line of the last named five townships produced northerly to the northern boundary of the District, and on the east by a line produced northerly between the Township of Bright and Thompson to the northern boundary of the District of Algoma.

6.—Consisting of St. Joseph's Island.

7.—All the territory of the District of Algoma lying east of the eastern boundary of the Third Division including the Village of Cutler and Johns Island.

BRANT.

A. D. Hardy, Judge, Brantford.

A. J. Wilkes, C.C.A. and C.P., Brantford.

1.—The City of Brantford and that part of the Township of Brantford not included in the other divisions hereinafter described. The Townships of Onondaga and Tuscarora and that part of the Township of Brantford lying south of the main road from Brantford to Hamilton and east of Fairchild's Creek.

2.—The Town of Paris and that part of South Dumfries west of the line between lots 18 and 19, and that part of the first concession of the Township of Brantford lying west of a continuation of the last-mentioned line.

3.—The remainder of the Township of South Dumfries, and of the first concession of the Township of Brantford.

4.—The ten northern concessions of the Township of Burford, and all that part of the 2nd, 3rd, 4th and 5th concessions of the Township of Brantford, west of the line between lots numbers 10 and 11, and that portion of the Kerr tract west of the continuation of the last-mentioned line.

5.—The Township of Oakland, the four southern concessions of the Township of Burford and lots numbers 1 to 5, inclusive, in the ranges east and west of the Mount Pleasant Road, in the Township of Brantford, adjoining the Township of Oakland.

BRUCE.

A. B. Klein, Judge, Walkerton.

A. M. Greig, J.J., Walkerton.

Thomas Dixon, C.C.A. and C.P., Walkerton.

1.—The Town of Walkerton and the Township of Carrick and the Township of Brant, south of the 12th concession, in the lots up to No. 26, and south of the 10th concession, in lots 26 to 34, inclusive.

2.—The Village of Teeswater, the Township of Culross and Greenock south of the 12th concession.

3.—The Town of Kincardine, the Township of Kincardine, lying south of the 10th concession.

4.—The Village of Paisley, and that part of the Township of Brant lying north of the 11th concession and west of lot 26. That part of Greenock lying north of concession 11; lots 26 to 35, inclusive, in the 8th, 9th, 10th, 11th, 12th, 13th and 14th concessions of the Township of Bruce; and Saugeen, east of a line between lots 28 and 29, and south of the proportion of the town line between Arran and Elderslie to the Saugeen River. All Elderslie lying west of the 25th side line and south of the 12th concession. And also that part lying north of concession 11 and west of lot 17.

5.—All of the Township of Amabel lying north of the 10th concession, Port Elgin and Southampton, and all Saugeen not in No. 4, Arran, west of the line between lots 10 and 11, north of Arran Lake and its outlet, and Amabel, south of concession 11, and west of concession C, and concessions 8, 9 and 10.

6.—The Village of Tiverton and all the Township of Bruce, except that part included in No. 4, and all Kincardine north of the 9th concession.

7.—Tara and all Arran, not in No. 5, and all Elderslie, not in Nos. 4 and 12, and Amabel, south of the 8th concession and east of concession lettered C.

8.—The Town of Wiarton, the Township of Albemarle and that part of Amabel not in Nos. 5 and 7.

9.—The Township of Huron.

10.—The Townships of Eastnor, Lindsay, and St. Edmunds.

11.—Lucknow and the Township of Kinloss.

12.—Chesley and those parts of Brant and Elderslie not included in Nos. 1, 4 and 7.

CARLETON.

————————, Judge, Ottawa.

R. D. Gunn, J.J., Ottawa.

J. A. Ritchie, C.C.A. and C.P., Ottawa.

1.—Comprising all the City of Ottawa and the Township of Gloucester, to lot 15, inclusive, Rideau Front, and concessions 1 and 6, inclusive, Ottawa Front and the islands in the Ottawa River opposite thereto.

2.—The Township of Goulburn, the 8th, 9th, and 10th concessions of the Township of Marlborough, all the Township of Nepean south of the River Goodwood, and the 4th, 5th, and 6th concession thereof north of the same river to the boundary line between lots 20 and 21 in the last-mentioned concession.

3.—The Township of Huntley and the Township of March, except lots 1 to 5, inclusive, in concession 1, 2, 3 and 4 thereof.

4.—The Townships of Fitzroy and Torbolton.

5.—The Township of North Gower, Long Island in the Rideau River, and 1st, 2nd, 3rd, 4th, 5th, 6th and 7th concessions of Marlborough.

6.—The Township of Osgoode, the 6th, 7th, and 8th concessions Ottawa Front, and from lots 16 to 30, inclusive, of Rideau Front of the Township of Gloucester.

7.—The Township of Nepean, except the City of Ottawa, and part of the said Township lying south of the River Goodwood and concessions 4, 5 and 6, north of

the River Goodwood to the boundary between lots 20 and 21 in the said last-mentioned concessions, and including also lots 1 to 5, inclusive, in concession 1, 2 3 and 4, in the Township of March.

DUFFERIN.

W. G. Fisher, Judge. Orangeville.

J. L. Island, C.C.A. and C.P., Orangeville.

1.—The Town of Orangeville, the Township of East Garafraxa and all that portion of the Township of Amaranth lying south of the southern boundary of lot No. 26, in each concession in the Township of Amaranth.

2.—The Village of Shelburne, the Township of Melancthon, and all that portion of the Township of Amaranth lying north of the southern boundary of lot number 26, in each concession of the Township of Amaranth.

3.—The Township of Mulmur.

4.—The Township of Mono.

5.—The Township of East Luther.

ELGIN.

C. W. Colter, Judge. St. Thomas.

C. O. Z. Ermatinger, J.J., St. Thomas.

A. McCrimmon, C.C.A. and C.P., St. Thomas.

1.—The Townships of Bayham, Malahide and South Dorchester.

2.—The Townships of Southwold and Yarmouth (except the City of St. Thomas).

3.—The City of St. Thomas.

4.—The Townships of Aldborough and Dunwich.

ESSEX.

J. O. Dromgole. Judge, Sandwich.

G. Smith, J.J., Sandwich.

J. H. Rodd. C.C.A. and C.P., Windsor.

1.—Town of Sandwich and Township of West Sandwich.

2.—Town of Amherstburg and the Townships of Malden and Anderdon.

3.—The Village of Kingsville, and all that part of the Township of Gosfield not included in Division No. 8.

4.—The Township of Colchester South, and all Colchester North, south of the 9th concession, exclusive of the said concession, and the lots on both sides of Malden Road.

5.—Township of Mersea and Village of Leamington.

6.—The Township of Rochester. the Village of Belle River, the first concession of the Township of Maidstone, and all north of the Malden Road in the said Township of Maidstone.

7.—Town of Windsor. the Town of Walkerville. and all of Sandwich East. north of the Talbot Street range.

8.—The Town of Essex, and all of the Township of Maidstone lying west of the first concession and south of the Malden Road; so much of Sandwich East as is south of Talbot Street, including the lots on both sides of said street to Nos. 306 and 307: all of Colchester north of the 9th concession, including said concession and lots on both sides of Malden Road. and all that part of Gosfield lying north

of concession 6, and extending as far east from the limits between Gosfield and Colchester as lots No. 12, including such lot in each concession north of concession 6, inclusive.

9.—The Townships of Tilbury West and Tilbury North.

10.—The Township of Pelee.

FRONTENAC.

H. A. Lavell, Judge, Kingston.

J. L. Whiting, C.C.A. and C.P., Kingston.

1.—City of Kingston, Township of Garden Island, Wolfe Island, Howe Island, and concessions 1, 2, 3 and 4 of the Township of Pittsburg, the Village of Cataraqui, the Township of Kingston and the Village of Portsmouth.

3.—Loughboro', the Townships of Loughboro' and Bedford.

4.—Verona, Townships of Portland and Hinchinbrooke.

5.—Sudbury, the Township of Storrington and that part of the Township of Pittsburg not included in division No. 1.

6.—The Townships of Olden, Oso, Barrie, Clarendon, Palmerston, Miller, Canonto, and South Canonto.

7.—The Township of Kennebec.

GREY.

C. T. Sutherland, Judge, Owen Sound.

C. H. Widdifield, J.J., Owen Sound.

T. H. Dyre, C.C.A. and C.P., Owen Sound.

1.—The Town of Owen Sound, the Village of Brooke and the Townships of Derby, Keppel, Sarawak and Sydenham.

2.—The Town of Durham, the Township of Egremont, and those portions of the Townships of Bentinck, Normanby and Glenelg as follows:—That part of the Township of Bentinck lying east of the line between lots 30 and 31 in the 1st, 2nd and 3rd concessions south of the Durham Road, and in concessions 1, 2 and 3 north of the Durham Road, and east of the line between lots 15 and 16 in concessions 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15 thereof. That part of the Township of Normanby lying east of the line between lots 20 and 21, in the 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th and 18th concessions, and all of the Township of Glenelg, excepting that portion lying east of the line between lots 10 and 11 in the 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th and 15th concessions thereof.

3.—The Town of Meaford, the Township of St. Vincent, and that part of the Township of Euphrasia, lying west of the line between the 6th and 7th concessions and north of the line between lots 15 and 16.

4.—The Township of Collingwood and the east half of the Township of Euphrasia, excepting that part thereof lying between the 4th and 5th concessions and south of the lots between 12 and 13, and east half of the Township of Osprey.

5.—The Township of Proton, the west half of the Township of Osprey, and those parts of the Township of Artemesia consisting of the ranges of lots lying parallel to the Toronto and Sydenham Road, and south of the lines between lots 130 and 131, and concessions 1, 2 and 3 south of the Durham Road, and 1, 2, 3, 4, 5 and 6 north of the said Durham Road, and those portions of concessions 7, 8 and 9 lying east of the ranges of lots parallel with the Toronto and Sydenham

Road, and those portions of concessions 10, 11, 12, 13 and 14 lying east of the line between lots 30 and 31.

6.—The Township of Sullivan and the Township of Holland, excepting those portions of concessions 9, 10, 11 and 12 lying south of the line between lots 15 and 16, and those portions of concessions 7 and 8 west of the ranges of lots lying parallel with the Toronto and Sydenham Road, and the ranges of lots lying parallel with the Toronto and Sydenham Road south of the line between lots 50 and 51.

7.—All lots from 1 to 30, inclusive, in the three concessions south and the three concessions north of the Durham Road in the said Township of Bentinck, and all the lots from 1 to 15, inclusive, in the 12th concession, from the 4th to the 15th concessions, inclusive, of the said Township of Bentinck, and all the lots from 1 to 20, inclusive, in all the concessions from 4 to 18, inclusive, in the Township of Normanby aforesaid.

8.—All the lots from 51 to 130, inclusive, in all the concessions parallel to and being northeast and southwest of the Toronto and Sydenham Road, in the Townships of Artemesia, Glenelg and Holland aforesaid; all lots to the westward of the dividing line between lots 30 and 31, in all the concessions from 10 to 14, inclusive, and all the lots from 1 to 5 in the 7th, 8th and 9th concessions, inclusive, which lie to the southwest of the third concession, southwest of the said Toronto and Sydenham Road, in the said Township of Artemesia; all the lots from 1 to 15, inclusive, in concessions from 5 to 6, and all the lots from 1 to 15, inclusive, in the concessions from 7 to 12, inclusive, in the Township of Euphrasia; all lots south of the allowance for road between lots 15 and 16, in the 9th, 10th, 11th and 12th concessions, and from lots 25 to 30, inclusive, on the 7th concession, and lots 28, 29, and 30 in the 8th concession of the said Township of Holland; and all the lots lying east of allowance for road between lots 10 and 11 in all the concessions from 7 to 15, inclusive, in the Township of Glenelg.

HALDIMAND.

G. H. Hopkins, Judge, Cayuga.

Harrison Arrell, C.C.A. and C.P., Cayuga.

1.—Comprising the Township of Seneca, except the first and second concessions, the Young Tract, and the property of the late Richard Martin and the late Robert Weir; all of the Township of Oneida, except the first range north of the Cayuga line, the Dennis Tract, and the lots southerly of the said tract, and the Village of Caledonia.

2.—Comprising the Township of North Cayuga, except that portion thereof lying northeast of the side line between lots 12 and 13, and 1st and 2nd concessions of the Township of Seneca, except that portion thereof lying northeast of the side line between lots 12 and 13, the Young Tract, and the lands of the late Robert Weir and Richard Martin, Esquires, in the said Township of Seneca, the first range of Oneida north of the Cayuga line, also the Dennis Tract and river lots lying south, and the Townships of Rainham and South Cayuga.

3.—Comprising the Townships of Moulton, Sherbrooke and Dunn, and the Town of Dunnville.

4.—Comprising the Township of Walpole, and the Village of Hagersville.

5.—Comprising the Township of Canboro', that portion of North Cayuga lying east of the side line between lots 12 and 13, and those parts of the 1st and 2nd concessions of the Township of Seneca lying northeast of the side line between lots 12 and 13.

COUNTY OF HALIBURTON.

(Annexed to Victoria for Judicial Purposes.)

W. D. Swayze, Judge, Lindsay.
H. McMillan, J.J.
T. H. Stinson, C.P. and C.C.A., Lindsay.

1.—The Townships of Glamorgan and Snowden, except that portion of both included in the third division, and all of the Townships of Snowden, Lutterworth, Minden, Anson, Stanhope, Hindon.

2.—The Townships of Dysart, Guilford, Harburn, Dudley, Harcourt and Bruton, and that portion of Monmouth not included in the third division.

3.—All the rest of the territory comprising Township of Monmouth (except lots 1 and 19, inclusive) in 13th, 14th, 15th, 16th and 17th concessions, the Township of Cardiff, the south 12 concessions of the Township of Glamorgan, and from lot 21, inclusive, to the eastern boundary in the south six concessions of Snowden.

4.—The Townships of Shelbourne, McClintock, Livingstone, Lawrence, Nightingale, Havelock, Eyre and Clyde.

HALTON.

J. W. Elliott, Judge, Milton.
W. I. Dick, C.C.A. and C.P., Milton.

1.—All the territory comprised in the new survey of the Township of Trafalgar, and the first ten lots in concessions 1, 2, 3, 4, 5 and 6 in the Township of Esquesing, and the first five lots in concessions 7, 8, 9, 10 and 11 in the said township.

2.—That part of the Township of Trafalgar known as the Old Survey.

3.—All the rest of the territory comprised in concessions 8, 9, 10 and 11 in the Township of Esquesing not comprised in the first division.

4.—All the rest of the territory comprised in concessions 1, 2, 3, 4, 5 and 6, Township of Esquesing.

5.—The Township of Nassagaweya.

6.—The Township of Nelson.

HASTINGS.

G. E. Deroche, Judge, Belleville.
J. F. Wills, J.J., Belleville.
Wm. Carnew, C.C.A. and C.P., Belleville.

1.—The City of Belleville and the Township of Thurlow; also all that portion of the Township of Sidney lying south of the 8th concession and east of the line between lots 18 and 19.

2.—The Townships of Wollaston, Limerick and Cashel, and the six northerly concessions of the Townships of Tudor and Grimsthorpe, and all those parts of the Township of Lake, in all the concessions thereof lying north of lots 21 in said concessions, all in the County of Hastings.

3.—The Township of Tyendinaga, except that part called Deseronto.

4.—The Township of Hungerford.

5.—All that part of the Township of Sidney which lies to the north of the 7th concession, and all that part of the Township of Rawdon which lies to the south of the 9th concession, and that part of the Township of Huntingdon south of the 6th concession.

6.—The Township and Village of Madoc, the Township of Elzevir and all that part of the Township of Huntingdon north of the 5th concession, and all of the Township of Tudor and Grimsthorpe, except the northerly six concessions of each of the said townships.

7.—The Village of Deseronto.

9.—The Town of Trenton, and all that part of the Township of Sidney lying south of the 8th concession and west of the line between lots 18 and 19.

10.—The Township of Marmora, that part of the Township of Lake lying south of lots 22 in all the concessions thereof, and all that part of the Township of Rawdon which lies north of the 8th concession thereof.

11.—The Townships of Herschell, Monteagle, Carlow, Bangor, Wicklow and McClure.

12.—The Townships of Faraday, Dungannon and Mayo, and the Village of Bancroft.

HURON.

L. H. Dickson, Judge, Goderich.

E. N. Lewis, J.J., Goderich.

Chas. Seager, C.C.A. and C.P., Goderich.

1.—Comprising the Town of Goderich, that part of the Township of Goderich to the north of the Cut Line and the Huron Road until the same meets the road allowance between the 13th and 14th concessions, then back along the Huron Road to its junction with the Cut Line, then west by the road allowance between concessions 11 and 12 to the River Maitland, then along the River Maitland to Goderich, together with the Township of Colborne.

2.—Comprising the Township of McKillop, the Town of Seaforth, and all that portion of the Township of Tuckersmith not included in the third division.

3.—Comprising all that portion of the Township of Hullett south of the blind line between the 7th and 8th concessions, of the Township of Hullett, that part of the Township of Goderich not included in Nos. 1 and 7, 1st, 2nd, 3rd and 4th concessions, Township of Stanley 1st and 2nd concessions, Township of Tuckersmith, L.R.S., north of lot 15, and that portion west of side road between lots 25 and 26, H.R.S., and Town of Clinton.

4.—Comprising the Township of Grey, all of the Township of Morris east of side road between lots Nos. 10 and 11 (which is not included in No. 12) and the Village of Brussels.

5.—Comprising the Townships of Usborne and the Village of Exeter.

6.—Comprising the Townships of Ashfield and all West Wawanosh, except that portion east of Maitland River.

7.—Comprising the Township of Goderich, south of Cut Line and Huron Road until the same joins the road between the 12th and 14th concessions of the Township of Goderich; thence along the said concessions until the same joins the River Bayfield, all Stanley not included in No. 3 and the Village of Bayfield.

8.—Comprising the Village of Wingham, the Township of Turnbury, all that part of East Wawanosh not included in No. 12, and all of the Township of Morris not included in Nos. 4 and 12.

9.—Comprising the Township of Howick and the Village of Wroxeter.

10.—Comprising the Township of Hay.

11.—Comprising the Township of Stephen.

12.—Commencing at the northeast angle of the Township of Hullett, thence southerly along the easterly boundary of the said Township of Hullett to the blind

line between the 7th and 8th concessions of said township, thence westerly along said line to the western boundary of the township, thence northerly along the westerly boundary of the township to the Maitland River at the southeastern corner of the Maitland Block, thence along the said river northerly till the western boundary of East Wawanosh is reached, thence northerly along said westerly boundary to the road running between the 6th and 7th concessions of said Township of East Wawanosh, thence easterly along said road to the easterly limit of said township, thence northerly along the gravel road to the road running between the 5th and 6th concessions of the Township of Morris, thence easterly along said road to the line between lots 10 and 11, thence southerly along said line between the 6th and 7th concessions, thence easterly along said line to the line between lots 15 and 19, thence southerly to the boundary line between the Townships of Morris and Hullett, thence easterly to the place of beginning, including the Village of Blyth.

DISTRICT OF KENORA.

T. W. Chapple, Judge, Kenora.

J. F. MacGillivray, C. Atty. and C.P., Kenora.

1.—Comprising all the portion of the said District of Kenora lying west of the Seventh Meridian Line, including the Towns of Kenora and Keewatin.

2.—Compising all that portion of the said District lying east of the eastern boundary of the Third Division, south of the northern boundaries of the Townships of Zealand and Hartman to the eastern boundary of the said District, including the Municipality of Ignace.

3.—Comprising all that portion of the said District lying between the Seventh Meridian Line and a line drawn parallel with the western boundary of lot 10 in the Township of Zealand, and extending northward to the northern boundary of the said District and southward to the southern boundary thereof, including the Town of Dryden.

4.—Comprising all that portion of the said Second Division, lying north of a line drawn eastward along the northern boundaries of the Township of Zealand and Hartman, to the eastern boundary of the said District of Kenora.

KENT.

Ward Stanworth, Judge, Chatham.

J. J. Coughlin, J.J., Chatham.

H. D. Smith, C.C.A. and C.P., Chatham.

1.—The First Division to consist of the City of Chatham and that part of the Townships of Dover East and West to the south of the 12th and 13th concession line of the Township of Dover East, and that part of the Township of Chatham south of the 12th and 13th concession line, and west of the side roads between lots 12 and 13, from the first mentioned 12th and 13th concession line to the 5th and 6th concession line, and all south of the said 5th and 6th concession line of said township; that part of the Township of Harwich north of 5th and 6th concession line, by the easterly boundary; that part of the Township of Raleigh north of the 16th concession to the west side road between lots 12 and 13 north to the 6th and 7th concession line, and all of the said township north of the said last-mentioned line, and that part of the Township of Tilbury East north of the 4th concession.

2.—The Second Division to consist of that portion of Township of Howard south of the 2nd and 3rd concession line by the eastern boundary (known as the

Botany Road), and that part of the Township of Orford south of the 10th and 11th concession line of said township.

3.—The Third Division to consist of all that part of the Gore of Camden lying west of the 10th and 11th concession line, and that part of the Township of Camden lying west of the side line between lots 6 and 1; the Village of Dresden, and that part of the Township of Chatham north of the 5th and 6th concession line and east of the side roads between lots 12 and 13.

4.—The Fourth Division to consist of that part of the Township of Harwich south of the 5th concession of the eastern boundary, and south of the 3rd concession by the western boundary, and that part of Raleigh south of the 15th concession and east of the side road between lots 12 and 13 and the road to the shore through lot 146 on the Talbot Road.

5.—The Fifth Division to consist of the Village of Wallaceburg, the Gore of Chatham and that part of the Township of Chatham northwest of the 12th and 13th concession line, and west of the said roads between lots 12 and 13, and that part of Dover lying north of the 12th and 13th concession side road.

6.—The Sixth Division to consist of that part of the Township of Howard north of the Botany Road aforesaid, and that part of the Township of Oxford north of the 10th and 11th concession line, the Township of Rone, the Township of Bothwell, the Village of Thamesville, and that part of the Gore of Camden east of the 10th and 11th concession line, and that part of the Township of Camden east of the side line between lots 6 and 7.

7.—The Seventh Division to consist of that part of Tilbury East south of the 3rd concession, the Township of Romney, and that part of the Township of Raleigh south of the 6th and 7th concession line, and west of the side road between lots 12 and 13, in the said township, and the road through lot 147 on Talbot Road.

LAMBTON.

D. F. Macwatt, Judge, Sarnia.

A. E. Taylor, J.J., Sarnia.

F. W. Willson, C.C.A. and C.P., Sarnia.

1.—The City of Sarnia, the Townships of Sarnia and Moore, and the Villages of Point Edward and Cartwright.

2.—The external boundaries of the Township of Warwick, including that portion of the Village of Arkona south of the township line.

3.—The external boundaries of the Townships of Euphemia and Dawn.

4.—The external boundaries of the Township of Sombra.

5.—The external boundaries of the Township of Plympton.

6.—The external boundaries of the Township of Bosanquet, including that portion of the Village of Arkona north of the township line.

8.—The external boundaries of the Township of Enniskillen.

9.—The external boundaries of the Township of Brooke.

LANARK.

J. H. Scott, Judge, Perth.

J. M. Balderson, C.C.A. and C.P., Perth.

1.—The Town of Perth, and the Townships of Drummond, Bathurst, South Sherbrooke, Burgess North, and that part of the Township of Elmsley North, north of the Rideau River, within the County of Lanark, and west of lot No. 12 in each concession.

2.—The Second Division to consist of the Village of Lanark, and the Townships of Lanark, Dalhousie, Darling, Lavant and North Sherbrooke.

3.—The Third Division to consist of the Town of Carleton Place and the Township of Beckwith, and the first six lots in the first seven concessions of Township of Ramsay.

4.—The Township of Montague, the Town of Smith's Falls, and that part of the Township of North Elmsley, from lot No. 1 to lot No. 12, in each concession, both inclusive, not within the limits of the Town of Smith's Falls.

5.—The Township of Pakenham, the Town of Almonte, and the Township of Ramsay, with the exception of the first six lots in the first seven concessions of the said township.

LEEDS AND GRENVILLE.

J. K. Dowsley, Judge, Brockville.

E. J. Reynolds, J.J., Brockville.

M. M. Brown, C.C.A. and C.P., Brockville.

1.—To consist of the 1st, 2nd, 3rd, 4th, 5th, 6th and 7th concessions and broken front of the Township of Elizabethtown, and the concession roads between them.

2.—To comprise the 1st, 2nd, 3rd, 4th, 5th concessions and broken front, and that part of the 6th, 7th and 8th concessions from the town line of Edwardsburg to lot No. 18, inclusive of the Township of Augusta, and the concession roads between them, and the 1st concession of the Township of Edwardsburg, including the Village of Cardinal.

3.—To consist of the 1st, 2nd, 3rd, 4th and 5th concessions and broken front of the Townships of Leeds and Lansdowne, respectively, and the concession roads between them.

4.—To consist of the Township of South Gower, the Township of Oxford from the west side line of lots No. 11 in all the concessions of the eastern boundary of the township, and the gore of land between South Gower, Oxford and Edwardsburg.

5.—To consist of the Township of Wolford (except the 7th and 8th concessions and the allowances of roads within and between them); lots Nos. 1 to 10, inclusive, in the 2nd, 3rd, 4th, 5th, 6th, 7th and 8th concessions of the Township of Oxford, and allowances of roads within and between them.

6.—To consist of the Townships of Bastard and Burgess, and those parts of the Townships of Leeds and Lansdowne, on the north side of the rear of the 5th concession in each respectively.

7.—To consist of the Townships of Kitley and Elmsley.

8.—To consist of the Townships of North Crosby and South Crosby.

9.—To consist of that part of the Townships of Escott and Yonge, in rear of the 4th concession of Yonge, and in rear of the 6th concession of Escott; that part of the Township of Elizabethtown, in rear of the 7th concession of and west of lot No. 18 in the 8th, 9th, 10th and 11th concessions, and the allowances for roads embraced therein.

10.—The Township of Edwardsburg excepting the 1st concession thereof, including the Village of Cardinal.

11.—To consist of that part of the Township of Augusta in rear of the 5th concession and west of lots No. 18 in the 6th, 7th and 8th concessions: the whole of the 9th and 10th concessions of the Township of Augusta: the Gore between the Townships of Oxford, Wolford and Augusta: that part of the Township of Eliza-

bethtown in rear of the 7th concession, and east of the commons, between lots No. 18 and 19 in the 8th, 9th and 10th concessions; the 7th and 8th concessions of the Township of Wolford; lots No. 1 to 10, inclusive, in the 9th and 10th concessions of the Township of Oxford; and the allowance for roads embraced therein.

12.—To consist of the 1st, 2nd, 3rd, and 4th concessions and broken front of the Township of Yonge; the 1st, 2nd, 3rd, 4th, 5th and 6th concessions and broken front of the Township of Escott, and the allowances for roads embraced therein.

The said 1st, 2nd and 12th divisions shall respectively embrace and comprehend within their lines those portions of the River St. Lawrence and islands therein, within the exterior lines of which such portions of said river and islands would lie and be, if such exterior side lines were produced and extended in that direction to the utmost limits of the Province.

LENNOX AND ADDINGTON.

Jas. H. Madden, Judge, Napanee.

U. M. Wilson, C.C.A. and C.P., Napanee.

1.—The Town of Napanee, Township of Richmond, all that part of North Fredericksburgh and Adolphustown lying north of Hay Bay, and all that part of North Fredericksburg lying north of Big Creek.

2.—Comprises 1st concession of Ernestown, the Village of Bath, the Township of Amherst Island, and the 2nd, 3rd and 4th concessions of the said Township of Ernestown, from the west limits thereof to the west limit of lot No. 21 in each concession.

3.—Township of South Fredericksburg and all that part of North Fredericksburg and Adolphustown not included in Division No. 1.

4.—1st, 2nd and 3rd concessions of the Township of Camden and the Village of Newburg.

5.—All that part of the Township of Camden not included in Division No. 4.

6.—All that portion of the Township of Ernestown not included in the limits of Division No. 2.

7.—Township of Sheffield.

8.—Townships of Kaladar, Anglesea and Effingham.

9.—Townships of Abinger, Ashby and Denbigh.

LINCOLN.

J. S. Campbell, Judge, St. Catharines.

M. Brennan, C.C.A. and C.P., St. Catharines.

1.—The Town and Township of Niagara.

2.—The Township of Grantham (including the City of St. Catharines), the Villages of Merritton and Port Dalhousie and the Township of Louth.

3.—The Townships of Caistor and Gainsborough and the 9th concession of the Township of Grimsby, including the 1st and 2nd ranges as part of the said concession.

4.—The Village of Beamsville and the Township of Clinton.

5.—The Village of Grimsby, the Township of North Grimsby, and the Township of South Grimsby, except that portion included in the Third Division.

DISTRICT OF MANITOULIN.

C. E. Hewson, Judge, Gore Bay.

W. F. McRae, C.A., and C.P., Gore Bay.

1.—The Town of Gore Bay, the Townships of Gordon, Allan, Campbell, Mills, Burpee, Robinson, Dawson, The Islands, Barrie, Clapperton and the Duck Islands, and that part of the Township of Billings lying west of the road allowance between lots 15 and 16 in the several concessions thereof, and so much of the Township of Carnarvon as lies west of Lake Mindemoya and north of the line between the 6th and 7th concessions thereof, and Cockburn Island.

2.—The Town of Little Current, the Township of Howland and those parts of the Townships of Sheguindah and Bidwell lying north of the line between the 6th and 7th concessions of Sheguindah and the 4th and 7th concessions of the Township of Bidwell, and the 6th and 7th concessions of the line between lots 17 and 18 in the Township of Billings, and the adjacent islands lying north and east of the said Townships, except the Clapperton Island.

3.—Manitowaning, the Townships of Assiginack, Tehkummah and Sandfield, and those parts of the Township of Sheguindah lying south of the line between the 4th and 5th concessions of the Township of Bidwell and 6th and 7th concessions of the Township of Billings to the line between lots 17 and 18 of said township, and the Township of Carnarvon, except so much of the same as lies west of Mindemoya Lake, and all the part of Manitoulin lying east of the Township of Assiginack, Manitowaning and South Bays and the islands adjacent thereto.

MIDDLESEX.

Talbot Macbeth, Judge, London.

J. C. Judd, J.J., London.

J. B. McKillop, C.C.A., and C.P., London.

1. That part of the City of London lying to the west of Maitland Street with that portion of the Township of London lying south of the line between the 4th and 5th concessions and west of the said street, produced northerly on a line in the same direction to the line between the said 4th and 5th concessions, and with that portion of the Township of Westminster lying west of the main road leading south from Clark's Bridge, across the Thames, south to the line between the 1st and 2nd concessions, and westerly to the line between lots 42 and 43, and extending northerly to the River Thames, and also including the Village of London West.

2.—The Villages of Parkhill and Ailsa Craig, the Townships of East Williams and West Williams, and that portion of the Township of Lobo lying north of the line between the 11th and 12th concessions, and east of the lines between lots Nos. 12 and 13.

3.—The Townships of McGillivray and Biddulph and the Village of Lucan.

4.—The Township of Delaware, with that portion of the Township of Westminster west of the line between lots 30 and 31 in the 2nd concession, then southerly on the line between lots 20 and 21 to the southerly limit of the township, including all west of said line, and also including all that portion of the front of said Township of Westminster lying west of the line between lots Nos. 42 and 43, not included in the first division, with that portion of the Township of Caradoc lying south of the line between the 5th and 6th concessions to the River Thames, and with that portion of the Township of Lobo lying south of the line between the 6th and 7th concessions, to the River Thames.

5.—The Township of Ekfrid and Mosa, including the Villages of Wardsville, Newbury and Glencoe.

6.—Townships of Adelaide and Metcalfe, the Town of Strathroy, with that portion of the Township of Caradoc lying north of the line between the 3rd and 4th concessions, with that portion of the Township of Lobo which lies north of the 6th concession and west of the line between lots 12 and 13 of the said township.

7.—The Township of North Dorchester, north and south of the River Thames, that portion of the Township of West Nissouri which lies south of the line between lots 14 and 15, and with that portion of the Township of Westminster lying south of the line between the 1st and 2nd concessions and east of the line between lots 30 and 31 in the 2nd concession and thence east of the line between lots 20 and 21, continued south to the southerly limit of the said Township of Westminster.

8.—All that portion of the Township of London which lies north of the line between the 4th and 5th concessions, that portion of the Township of Lobo which lies north of the line between the 6th and 7th concessions, and east of the line between lots 12 and 13 to the line between the 11th and 12th concessions and with all that portion of the Township of West Nissouri which lies north of the line between lots 14 and 15.

9.—All that part of the City of London lying east of Maitland Street; that part of the Township of London, lying south of the line between the 4th and 5th concessions and east to the said street, produced northerly or in a line in the same direction to the line between the said 4th and 5th concessions and that part of the Township of Westminster lying north of the line between the 1st and 2nd concessions, and east of the main road leading south from Clarke's Bridge across the Thames.

DISTRICT OF MUSKOKA.

A. A. Mahaffy, Judge, Bracebridge.

Thomas Johnson, C.A., and C.P., Bracebridge.

1.—The Town of Bracebridge, concessions 1, 2, 3, 4, 5, 6, 7, 8, and 9, in the Township of Stephenson, Brunel and Franklin, and concessions 7, 8, 9, 10, 11, 12 and 13, in the Townships of Muskoka and Draper, and the Townships of Macauley, McLean, Ridout, Monck, Watt, Cardwell, Freeman, Gibson and Medora, including the Village of Port Carling.

2.—The Town of Gravenhurst, the Townships of Morrison, Ryde, Wood, Oakley and Baxter, and concessions 1, 2, 3, 4, 5 and 6 of the Townships of Muskoka and Draper.

3.—The Town of Huntsville, the Townships of Stisted, Chaffey and Sinclair, and concessions 10, 11, 12, 13 and 14 in the Townships of Stephenson, Brunel and Franklin.

DISTRICT OF NIPISSING.

Jos. A. Valin, Judge, North Bay.

H. D. Leask, J.J., North Bay.

T. E. McKee, C.A., and C.P., North Bay.

1.—To be composed of all that part of the District which is situated west of the line between the Indian Reserve and the Township of Widdifield produced south to the boundary of the District, and north of the north-east angle of the Township of Gooderham, and south of the line marking the northern boundary of the said Township of Gooderham produced west to the boundary of the District.

2.—To be composed of so much of the District as lies east of the line commencing at the north-west angle of the Township of Poitras produced to the south-east angle of the Township of French; the Townships of Olrig and Mattawan, and all that part of the District situated east of the line between the Townships of Bonfield and Calvin, produced to the southerly boundary of the District.

3.—To be composed of the Townships of Widdifield, Phelps, Ferris, Bonfield, Chisholm, Boulter, Ballantyne, Wilkes, Biggar, Paxton, Butt, Devine, Hunter, McCraney, Finlayson, Peck, and all that part of the District situated west of a line drawn from the south-east angle of the Township of French, produced north to the Ottawa River, thence along the Ottawa River to the south-east angle of the Township of South Lorrain, thence west along the south boundary of South Lorrain to the east boundary of the Township of Cassels, thence north along the east boundary of the Township of Cassels, produced northerly to the northern boundary of the District, thence west along the northern boundary of the District to the western boundary thereof, thence souherly along the western boundary to the north-west angle of the Township of Pardo, thence east along the north boundary to the Township of Pardo, produced to the north-east angle of the Township of Gooderham; thence southerly along the east boundary of the Township of Gooderham, and the said boundary forwarded to the waters of Lake Nipissing.

NORFOLK.

A. T. Boles, Judge, Simcoe.

T. R. Slaght, C.C.A., and C.P., Simcoe.

1.—The Town of Simcoe, the Gore of the Township of Woodhouse and all that part of said Township lying west of the side line between lots 5 and 6, together with that part of the 4th, 5th and 6th concessions lying west of the said line between lots 12 and 13.

2.—The Township of Townsend and the Village of Waterford.

3.—The Township of Windham.

4.—The Township of Middleton and the Village of Delhi.

5. The Township of Charlotteville.

6.—The Townships of North Walsingham, South Walsingham and the Village of Port Rowan.

7.—The Township of Houghton.

8.—The Village of Port Dover, and that part of the Township of Woodhouse not included in Division 1, viz.: all that part of the 1st, 2nd and 3rd concession lying east of the side line between lots 5 and 6, and that part of the 4th, 5th and 6th concessions lying east of the said line, between lots 12 and 13 in said township.

NORTHUMBERLAND AND DURHAM.

H. A. Ward, Judge, Port Hope.

G. M. Roger, J.J., Cobourg.

W. F. Kerr, C.C.A. and C.P., Cobourg.

1.—Townnships of Cartwright and Darlington and the Town of Bowmanville.

2.—Township of Clarke and Village of Newcastle.

3.—Township of Hope and Town of Port Hope.

4.—Townships of Cavan, Manvers, South Monaghan and Village of Millbrook.

5.—Township of Hamilton and Town of Cobourg.

6.—Townships of Haldimand and Alnwick.

7.—Township of Cramahe and Village of Colborne.
8.—Township of Brighton and Village of Brighton.
9.—Township of Percy and Village of Hastings.
10.—Township of Murray.
11.—Township of Seymour and Village of Campbellford.

ONTARIO.

T. A. MacGillivray, Judge, Whitby.
R. Ruddy, J.J., Whitby.
J. E. Farewell, C.C.A. and C.P., Whitby.

1.—Including the Townships of Whitby and East Whitby and the Towns of Whitby and Oshawa.
2.—The Township of Pickering.
3.—The Townships of Reach and Scugog and the Village of Port Perry.
4.—The Townships of Uxbridge and Scott and the Town of Uxbridge.
5.—The Township of Brock and the Village of Cannington.
6.—The Township of Thorah and Village of Beaverton.
7.—The Townships of Mara and Rama, including the Village of Brechin.

OXFORD.

J. G. Wallace, Judge, Woodstock.
R. N. Ball, C.C.A., and C.P., Woodstock.

1.—Comprising the City of Woodstock, the Township of East Oxford, and that part of the Township of East Zorra, lying south of the line between lots number twenty-five and twenty-six of the Township of Blandford, and that part of the Township of North Oxford lying east and north of the road between lots 16 and 17 to the boundary of the Township line between North and West Oxford, and that part of the Township of West Oxford lying east of the road between lots 6 and 7 to the boundary of the Township of East Oxford, and that part of the Township of Blandford lying south of the 10th concession.
2.—Comprises the Township of Blenheim.
3.—Comprises the Township of East Nissouri and West Zorra and the Village of Embro.
4.—Comprises the Townships of North Norwich and South Norwich and the Village of Norwich.
5.—Comprises the Town of Ingersoll and that part of the Township of North Oxford lying west and south of the road between lots No. 16 and 17 of the Township of West Oxford, and that part of the Township of West Oxford lying south of the road between lots 6 and 7 to the line between West Oxford and East Oxford, and those portions of the Township of Dereham being part of the 1st concession of the said Township of Dereham, west of the Middle Town Line.
6.—Comprises the Town of Tillsonburg and that part of the Township of Dereham not included in the Fifth Division.
7.—Comprising the Village of Tavistock and that part of the Townships of East Zorra, north of the road between lots 25 and 26, and that part of the Township of Blandford lying north of the 10th concession of the said Township.

DISTRICT OF PARRY SOUND.

F. R. Powell, Judge, Parry Sound.

W. L. Haight, C.A. and C.P., Parry Sound.

1.—The Town of Parry Sound and the Townships of Foley, McDougall, Cowper and Carling, and all that portion of the district lying to the west of the east boundary of Carling, produced to the French River.

2.—The Townships of McKellar, Ferguson, Hagerman, Croft, and all that portion of the district lying between the east boundary of Ferrie and the west boundary of Ferguson, produced to the French River.

3.—The Townships of Humphrey, Christie, Monteith and Conger.

4.—Townships of McMurrich, Perry, Armour, Proudfoot and Bethune.

5.—Townships of Spence, Chapman, Ryerson and Lount.

6.—That territory bounded on the west by the western boundaries of the Townships of Pringle and Patterson, and the western boundary of the Township of Patterson, produced to the French River and Lake Nipissing; on the east by the boundary of the District of Parry Sound, and on the south by the southern boundaries of the Townships of Himsworth, Gurd and Pringle.

7.—The Townships of Machar, Laurier, Strong and Joly.

PEEL.

B. F. Justin, Judge, Brampton.

W. S. Morphy, C.C.A. and C.P., Brampton.

1.—Township of Brampton, Township of Chinguacousy and northern division of the Township of Toronto Gore.

2.—Village of Streetsville, Township of Toronto and southern division of the Township of Toronto Gore.

3.—Township of Caledon.

4.—Village of Bolton, Township of Albion.

PERTH.

J. A. Barron, Judge, Stratford.

G. G. McPherson, C.C., and C.P., Stratford.

1.—To consist of all that part of the Township of North Easthope west of the line between lots 25 and 26, and south of the road between the 8th and 9th concessions, and all that part of the Township of South Easthope west of the side line between lots 25 and 26; all that part of the Townships of Downie and Gore north and east of the concession line between the 10th and 11th concessions and the Oxford Road: and all the Township of Ellice from the 1st to 13th concession, inclusive.

2.—To consist of all that part of the Township of Fullarton not included in Division No. 3, and the Townships of Hibbert and Logan.

3.—To consist of that portion of the Township of Downie west of the Oxford Road, and south of the concession line between the 10th and 11th concessions; the Township of Blanshard; all that part of the Township of Fullarton comprising the 13th and 14th concessions, and south of a road leading from Mitchell Road, between lots 24 and 25, east of lots 3 in the 10th concession; thence east along the line between the 10th and 11th concessions to the town line.

4.—To consist of that part of the Township of North Easthope east of the line between lots 25 and 26, and the north of the 8th concession, inclusive, with

the 9th and 10th concessions; all that part of the Township of South Easthope not included in Division 1.

5.—To consist of the Township of Mornington, and all that part of the Township of Elma from lots 13 to 72, both numbers inclusive, of the 1st concession, and from lots 27 to 16, both numbers inclusive, in and from the 2nd to the 18th concession, both concessions inclusive, of the said Township of Elma; and concessions 14, 15 and 16 of the Township of Ellice; and concessions 11, 12, 13 and 14 of the Township of North Easthope.

6.—To consist of the Township of Wallace and all that part of the Township of Elma from the 1st concession to the 18th concession, both concessions inclusive, and comprising lots Nos. 1 to 52, both inclusive, of the 1st concession, and lots Nos. 1 to 26 inclusive, from the 2nd to the 18th concession, both concessions inclusive.

PETERBOROUGH.

E. C. S. Huycke, Judge, Peterborough.

G. W. Hatton, C.C.A., and C.P., Peterborough.

1.—Shall comprise the City of Peterborough, the Townships of North Monaghan and Ennismore, all the Township of Smith lying south of the 7th concession, all that part of the Township of Otonabee lying west of the 8th concession and north of lots Nos. 21 and all that part of the Township of Douro lying south of lots numbered 11.

2.—Shall comprise the Village of Norwood, the Township of Asphodel, and all that part of the Township of Dummer lying east of the 5th concession and that part of the said Township of Dummer lying west of the 6th concession and south of lots numbered 11.

3.—Shall comprise that part of the Township of Smith lying north of the 6th concession, all that part of the Township of Douro lying north of lots numbered 10, that part of the Township of Dummer lying west of the 6th concession and north of lots numbered 10, the Township of Galway, the Township of Harvey and the Village of Lakefield.

4.—Shall comprise the Townships of Anstruther, Burleigh, Cavendish and Chandos.

5.—Shall comprise the Townships of Belmont and Methuen and the Village of Havelock.

6.—Shall comprise the Township of Otonabee, except that part thereof lying west of the 8th concession and north of lots numbered 21.

PRESCOTT AND RUSSELL.

A. Constantineau, Judge, L'Orignal.

C. G. O'Brian, J.J., L'Orignal.

Louis Cole, C.C.A., and C.P., L'Orignal.

1.—Comprises the whole of the Township of Longueuil, the municipality of the Village of L'Orignal, and the 1st concession of the Township of Caledonia.

2.—Comprising all that part of the Township of West Hawkesbury, extending from front of 3rd concession to the rear of the said township.

3.—Comprises the whole of the Township of East Hawkesbury.

4.—Comprising the Township of North Plantagenet, and that part of the Township of South Plantagenet lying north of the Nation River.

5.—Comprising the whole of the Township of Cumberland.

6.—Comprising the whole of the Township of Russell.

7.—Comprising the two front concessions of the Township of West Hawkesbury, and the Municipality of Hawkesbury Village, within the same.

8.—Comprising the Township of Caledonia (excepting the 1st concession of the said township), and also that portion of the Township of South Plantagenet lying south and east of the Nation River.

9.—Comprising the whole of the Township of Alfred.

10.—Comprising the whole of the Township of Clarence.

11.—Comprising the whole of the Township of Cambridge.

PRINCE EDWARD.

————, Judge, Picton.

R. H. Hubbs, C.C.A., and C.P., Picton.

1.—The Town of Picton, the 2nd and 3rd concessions of "Military Tract" from the west line of No. 13 eastward; Gore "G"; 1st and 2nd concessions north of the Carrying Place, 1st concession southeast of the Carrying Place, and 2nd concession north of Black River, including Gores "K" and "L" and McCan Gores, all in the Township of Hallowell; Block "I" in the concession north and east of East Lake, and Gore "B" in the Township of Athol, and 1st and 2nd concessions south of the Bay of Quinte, and Gore "A" in the Township of North Marysburg, and 1st concession southwest of Green Point to the end of Carman's Point in Sophiasburg.

2.—The Township of South Marysburg, and the Southern part of Athol, commencing at the outlet of East Lake, thence down to the head of the Lake, thence down to the base line between the 1st concession south and the 1st concession north of East Lake, till it strikes the township line of Hallowell, thence down said township line till it strikes South Marysburg.

3.—The Township of Sophiasburg, together with Big Island, excepting the 1st concession southwest of Green Point to the end of Carman's Point.

4.—All that part of the Township of Ameliasburg lying east of the line between lots 86 and 87, in the 1st, 2nd, 3rd and 4th concessions of said township, including Huff's Island.

5.—That part of the Township of Hillier not included in the 7th division, also the 1st and 2nd concessions north of West Lake, and west of lot No. 7 in the said concession, and that part of Irwin Gore lying north and west of lot No. 7 in the 2nd concession and the west part of the 2nd concession produced west of lot No. 74 in that concession in the Township of Hallowell.

6.—Block (IV.) four, concession south side of West Lake, 1st concession "Military Tract," 2nd and 3rd concessions of said tract west of Lots No. 13, in those concessions, "Gore E," 1st and 2nd concessions north of West Lake, and east of lot No. 6 in those concessions; the Gerrow Gore and that part of Irwin Gore not included in Division No. 8, and all that part of the 2nd concession produced east of lot No. 75 in the Township of Hallowell.

7.—All that part of the Township of Ameliasburg lying west of the line between lots No. 86 and 87, in the 1st, 2nd, 3rd and 4th concessions of said township; all that part of the 4th and 5th concessions of the Township of Hillier west of the line between lots 86 and 87 and the 3rd concession west of the line between lots No. 22 and 23, with that part of the 2nd concession lying North of Pleasant Bay in the said Township of Hillier.

8.—All the point lying east of the west line of Marshland's Gore, the concession lying north of Smith's Bay and Waupoos Island in the Township of North Marysburg.

DISTRICT OF RAINY RIVER.

A. Maclennan, Judge, Fort Frances.

N. L. Croome, C.C.A. and C.P., Fort Frances.

1.—To comprise all that part of the said District lying east of the east boundaries of the Townships of Aylesworth, Lash, Carpenter, Kingsford and Fleming, and east of the east boundary of the said Township of Fleming produced north to the north boundary of the said District.

2.—To comprise all that part of the said District lying west of Division No. 1 and east of the east boundaries of the Townships of Morley, Morley Additional, Pattullo, Sifton and Dewart, and east of a line drawn north astronomically from the northeast angle of the said Township of Dewart to the north boundary of the said District.

3.—To comprise all that part of the said District lying west of Division No. 2.

RENFREW.

J. M. McNamara, Judge, Pembroke.

Ivan McLean, J.J., Pembroke.

J. H. Burritt, C.C.A., and C.P., Pembroke.

1.—Comprising the Town of Pembroke, the Townships of Pembroke, Stafford, Alice, Petawawa, Buchan, Rolph, Wylie, McKay, Fraser, Herd, Clara and Maria, and all that part of the Township of Wilberforce from the 18th to the 25th concessions, both inclusive, and also those parts of the 14th, 15th, 16th and 17th concessions of the same Township of Wilberforce lying north of Snake River and east of Lake Dore.

2.—Comprising all that part of the Township of Westmeath lying east and north of the Muskrat Lake and River, and all those parts of the Township of Ross, from the 5th to the 9th concessions, both inclusive, east of Muskrat Lake, and from the 7th to the 13th (of the other) concessions, both inclusive, of the said Township of Ross.

3.—Comprising the Town of Renfrew and the Townships of Horton, Admaston, Bagot, Blythfield, Brougham and Matawachan, in the said County of Renfrew.

4.—Comprising the Village of Arnprior and the Township of McNab.

5.—Comprising the Townships of Grattan, Sebastopol, South Algoma, North Algoma, and all that part of the Township of Wilberforce, from the 1st to the 17th concessions, both inclusive, excepting those parts of the 14th, 15th, 16th and 17th concessions of said Township of Wilberforce lying north of Snake River and east of Lake Dore.

6.—Comprising the Township of Bromley, and all that part of the Township of Westmeath west of Muskrat Lake, and all those parts of the Township of Ross, from the 1st to the 14th concessions, both inclusive, of the said Township of Ross.

7.—Comprising the Townships of Brudenell, Radcliffe, Raglan, Lynedoch, Griffith, Hagarty, Sherwood, Jones, Richards and Burns.

SIMCOE.

G. N. Vance, Judge, Barrie.
E. A. Wismer, J.J., Barrie.
J. R. Cotter, C.C.A., and C.P., Barrie.

1.—Comprising the Town of Barrie, the Township of Vespra, except that portion lying west of the Nottawasaga River, and excepting also lots Nos. 38, 39 and 40, in the 1st and 2nd concessions, and lots Nos. 1, 2 and 3 in the 3rd, 4th, 5th, 6th and 7th concessions respectively. That portion of the Township of Oro lying south of lots Nos. 21 in the 1st and 2nd concessions (including the ranges), and south of lots Nos. 13 in the 3rd, 4th, 5th, 6th, 7th and 8th concessions respectively; that portion of the Township of Innisfil lying east of lots Nos. 5 in the 6th, 7th and 8th concessions, and that portion lying north of the 8th concession; that portion of the Township of Essa lying north of lots Nos. 19 in the 7th, 8th, 9th, 10th and 11th concessions.

2.—The Village of Bradford, the Township of West Gwillimbury, excepting thereout lots Nos. 1, 2, 3, 4 and 5 in the 14th and 15th concessions; the Township of Innisfil, excepting that portion lying north of the 5th concession, and excepting also lots Nos. 1, 2, 3, 4 and 5 in the 1st, 2nd, 3rd, 4th and 5th concessions thereof.

3.—The Township of Tecumseh, excepting concessions 12, 13, 14 and 15; the Township of Adjala, excepting that portion lying north of lot No. 25 in the 8th concession thereof.

4.—The Town of Collingwood, the Village of Stayner, that portion of the Township of Nottawasaga lying north of lot No. 18 in the 12th concession thereof; that portion of the Township of Sunnidale lying north of the 8th concession; that portion of the Township of Floss lying west of the Nottawasaga River; the islands in Lake Huron contiguous to the Township of Nottawasaga.

5.—The Township of Floss, except that portion lying west of the Nottawasaga River; the Township of Medonte, except that portion lying east of the 10th concession and north of lots Nos. 10 in the 9th and 10th concessions respectively; that portion of the Township of Oro lying north of the southern boundaries of lots Nos. 21 in the 1st and 2nd concessions, and north of the southern boundaries of lots Nos. 13 in the 3rd, 4th, 5th, 6th, 7th and 8th concessions respectively; lots Nos. 38, 39 and 40 in the 1st and 3rd concessions, and lots Nos. 1, 2 and 3 in the 3rd, 4th, 5th, 6th and 7th concessions of the Township of Vespra.

6.—The Town of Orillia, the Township of Orillia, southern division, the Township of Orillia, northern division, except that portion lying north of lots Nos. 15 in the first seven concessions thereof; that portion of the Township of Oro lying east of the 8th concession; that portion of the Township of Medonte, being composed of lots Nos. 1 to 6 (both inclusive) in the 11th, 12th, 13th, and 14th concessions; the islands in Lake Simcoe continguous to the townships and portions of townships above described lying wholly or for the most part opposite thereto.

7.—The Township of Nottawasaga, except that portion lying north of lot No. 18 in the 12th concession thereof; the Township of Sunnidale, except that portion lying north of the 8th concession; that portion of the Township of Vespra lying west of the Nottawasaga River; that portion of the Township of Essa lying north of lots 19 in the 1st, 2nd, 3rd, 4th, 5th and 6th concessions; that portion of the Township of Tossorontio lying north of lots Nos. 20 in each of the seven concessions thereof.

8.—The Township of Essa, except that portion lying north of lots Nos. 19 in each of the eleven concessions thereof; the Township of Tossorontio, except that portion lying north of lots Nos. 20 in each of the seven concessions thereof; that

portion of the Township of Innisfil, being composed of lots Nos. 1, 2, 3, 4 and 5 in the 1st, 2nd, 3rd, 4th, 5th, 6th, 7th and 8th concessions; the 12th, 13th, 14th and 15th concessions of the Township of Tecumseh; lots Nos. 1, 2, 3, 4 and 5 in the 14th and 15th concessions of the Township of West Gwillimbury; that portion of the Township of Adjala lying north of lots Nos. 25 in the eight concessions thereof.

9.—The Town of Penetanguishene and the Village of Midland, the Township of Tiny; that portion of the Township of Tay lying west of the 8th concession; the islands in Lake Huron contiguous to the Township of Tiny, and to that part of the Township of Tay, forming part of the 9th division, and lying wholly and for the most part opposite thereto.

10.—The Township of Matchedash, that portion of the Township of Orillia, northern division, lying north of lots Nos. 15, in the first seven concessions thereof; that portion of the Township of Medonte lying north of lots Nos. 6, in the 11th, 12th, 13th and 14th concessions, and that portion lying north of lots Nos. 10, in the 9th and 10th concessions thereof; the Township of Tay, except that portion lying west of the 8th concession; the island in Lake Huron, contiguous to that portion of the Township of Tay, forming part of the 10th division, and lying wholly or for the most part opposite thereto.

NOTE.—Each of the said several divisions shall include all allowances for roads embraced within its external limits, and shall also extend to the centre of every allowance for road lying external and adjacent to every such division, excepting always where any such last-mentioned allowance is hereinbefore declared to belong to or form part of any particular division.

STORMONT, DUNDAS AND GLENGARRY.

J. R. O'Reilly, Judge, Cornwall.
J. W. Liddell, J.J., Cornwall.
J. G. Harkness, C.C.A. and C.P., Cornwall.
1.—Township of Charlottenburg, in the County of Glengarry.
2.—Township of Lochiel, in the County of Glengarry.
3.—Township of Cornwall, in the County of Stormont.
4.—Township of Osnabruck, in the County of Stormont.
5.—Township of Williamsburg, in the County of Dundas.
6.—Township of Matilda, in the County of Dundas.
7.—Township of Mountain, in the County of Dundas.
8.—Township of Finch, in the County of Stormont.
9.—Township of Lancaster, in the County of Glengarry.
10.—Township of Winchester, in the County of Dundas.
11.—Township of Roxborough, in the County of Stormont.
12.—Township of Kenyon, in the County of Glengarry.

SUDBURY.

J. J. Kehoe, Judge, Sudbury.
R. R. McKessock, C.A. and C.P., Sudbury.

1.—To comprise so much of the District not included in Division No. 4, as lies east of a line commencing at the south-west angle of Township No. 82 productd north to the north-west angle of the Township of Fairbank, thence east to the south-east angle of the Township of Rayside, thence north to the north-east

angle of the Township of Kitchener, and so much of the District as lies north of the line drawn from the north-east angle of the Township of Kitchener, produced to the south-west angle of the Township of Botha, thence north to the north-west angle of said Township, and produced to the western boundary of the District, and all the territory lying east of a line produced north from the boundary of the District, between Townships Nos. 16 and 17 produced to the south-east angle of the Township of Shenango, thence west to the south-west angle of said Township, thence north to the boundary of the District.

2.—So much of the District as lies south of a line produced easterly from the south-west angle of the Township of Forks to the north-west angle of the Township of Botha, thence to the southern boundary of said Township, thence east to the north-east angle of the Township of Kitchener, thence south to the south-east angle of the Township of Rayside, thence west to the boundary of the District.

3.—So much of the District as lies west of a line produced north from the south-west angle of Township No. 82 to the north-west angle of the Township of Fairbank, thence west to the boundary of the said District.

4.—So much of the District that lies east of a line between Townships of Allen and Bigwood produced north to the northern boundary of the District

5.—So much of the District as lies west of a line drawn from the north-east angle of the Township of Shenango and produced to the southern boundary of the District, excepting said Township.

DISTRICT OF TEMISKAMING.

H. Hartman, Judge, Haileybury.
G. H. Hayward, J.J.
F. L. Smiley, C.A. and C.P., Haileybury.

1.—To be composed of that portion of the District lying south of the northerly boundary of the Townships of Klock, Barr, Firstbrook, and Bucke, and east of the line between the Townships of Van Nostrand and Klock, produced southerly to the boundary of the District.

2.—To be composed of the Townships of Cane, Henwood, Kearns, Harley, Casey, Auld, Lundy, Hudson, Dymond, Harris, Hilliard and Brethour including the Town of New Liskeard.

3.—So much of the District that lies north of the northern boundary of the Townships of Cane, Henwood, Kerns, Hilliard and Brethour and east of the boundary line between the Townships of Tudhope and Bryce, produced northerly to the north-west angle of the Township of Bernhardt, thence east to the boundary of the District.

4.—So much of the District as lies south of the southerly boundary of the Township of Langmuir produced easterly to the north-west angle of the Township of Bernhardt and west of the line between the Townships of Maisonville and Bernhardt, produced southerly to the southern boundary of the District.

5.—So much of the District as lies west of a line produced north from the south-east angle of the Township of Geikie to the north-east angle of the Township of Douglas, thence east to the south-east angle of the Township of Blackstock, thence north to the north-east angle of the Township of German, thence west to the north-west angle of said Township, thence north to the north-east angle of Evelyn, thence west along the northern boundary of said Township, thence north

to the north-east angle of the Township of Duff, thence west to the boundary of the District.

6.—So much of the District as lies north of the southern boundary of the Township of Kirkland produced east and west to the boundary of the District.

7.—So much of the District as lies north of a line drawn from the south-west angle of the Township of Timmins to the eastern boundary of the District and east of a line produced north from the south-west angle of said Township to the north-west angle of the Township of Stock, thence west to the south-west angle of the Township of Dundonald, thence north to the north-west angle of said Township, thence west to the south-west angle of the Township of Little, thence north to the north-west angle of the Township of Mann.

THUNDER BAY DISTRICT.

H. H. O'Leary, Judge, Port Arthur.
Jno. McKay, J.J., Port Arthur.
W. F. Langworthy, C.A., and C.P., Port Arthur.

1.—All that part of the district lying west of the meridian of 87 degrees of west longitude, to the meridian of the most easterly part of Hunter's Island, excepting therefrom the Municipality of Neebing.

3.—Comprising the Municipality of Neebing.

VICTORIA.

W. D. Swayze, Judge, Lindsay.
H. McMillan, J.J., Lindsay.
T. H. Stinson, C.C.A. and C.P., Lindsay.

1.—The first consists of the following townships and parts of townships, viz.: Of the 15th concession of the Township of Mariposa, and the Township of Eldon, except the ranges north and south of the Portage Road.

2.—All the Township of Fenelon, except that portion lying east of the Scugog River, and south of Sturgeon Lake, and the Township of Somerville.

3.—The Township of Verulam.

4.—The Township of Emily.

5.—The Town of Lindsay, Township of Ops, and that portion of the Township of Fenelon, lying east of the Scugog River, and south of Sturgeon Lake.

6.—The Township of Mariposa, except the 15th concession.

7.—The Townships of Carden and Dalton, Laxton, Digby and Longford, and the Township of Bexley, and that portion of the Township of Eldon north of Portage Road, and the range south of Portage Road.

WATERLOO.

C. R. Hanning, Judge, Kitchener.
E. J. Hearn, J.J., Kitchener.
D. S. Bowlby, C.C.A., and C.P., Kitchener.

1.—All that portion of the Township of Waterloo lying north of Blockline on the west side of the Grand River and that part of the upper block of said township lying north of said township lying on the east side of the Grand River, north

of lots Nos. 115, 109, 104, 86 and 95, to the Guelph Township line, including the Towns of Kitchener and Waterloo.

2.—All that part of the Township of Waterloo lying south of the Blockline on the west side of the Grand River, and that part lying on the east side of the Grand River, south of the northern boundary of lots Nos. 115, 109, 104, 85 and 95, to the Guelph Township line, includig the Villages of Preston and Hespeler.

3.—All that portion of the Township of North Dumfries lying east of lot No. 19 in the 7th concession, and running a course with eastern boundary of the said lot in a northerly direction up to the 12th concession: thence along the eastern boundary of lot No. 23, in the said 12th concession, to the township line, including the Town of Galt.

4.—The Township oof Wilmot, including the Village of New Hamburg.

5.—The Township of Wellesley.

6.—The Township of Woolwich.

7.—All that part of the Township of North Dumfries lying west of the eastern boundary of said lot No. 19, in the 7th concession; thence along the eastern limits of the said lot No. 19, the same course thereof, in a northerly direction to the 15th concession; thence along the westerly limit of lot No. 23, in the said 12th concession to the township line, including the Village of Ayr.

WELLAND.

L. B. C. Livingstone, Judge, Welland.

T. D. Cowper, C.C.A., and C.P., Welland.

1.—The Township of Crowland; that part of the Township of Thorold lying south of the lines between lots 178 and 195, running through to Pelham: that part of Pelham lying south of the 4th concession, and that part of Humberstone lying north of the concession line, between the 4th and 5th concessions, being the whole of the 15th concession and the Town of Welland.

2.—The Township of Wainfleet.

3.—The Township of Bertie, and those parts of the Township of Humberstone not included in Nos. 1 and 6, and the Village of Fort Erie.

4.—The Township of Willoughby, the Village of Chippawa, and that part of the Township of Stamford south of the line between lots 136 and 137: easterly from the westerly limit of the township to the south-east angle of lot No. 133; thence north on the line between lots Nos. 132 and 133, to the northern boundary of the township, including the towns of Clifton and Navy Island.

5.—Those parts of the Township of Stamford, Thorold and Pelham not included in any other division, and the Town of Thorold.

6.—All the Township oof Humberstone lying south of the 5th concession, and west of the side lines between lots Nos. 9 and 10, in the several other concessions thereof, and the Village of Port Colborne.

WELLINGTON.

L. M. Hayes, Judge, Guelph.

A. Spotton, J.J., Guelph.

A. H. Macdonald, C.C.A., and C.P., Guelph.

1.—The Town and Township of Guelph.

2.—The Township of Puslinch.

The Township of Eramosa.

4.—The Township of Nichol, excepting the 11th and 12th concessions: the Municipality of Fergus: the first eight concessions of the Township of Garafraxa; and lots 1 to 18, both inclusive, in concessions A and B of the Township of Peel; lots 13, 14, 15, 16, 17 and 18, in concessions 18 and 19, and lots 19, 20 and 21 in the 17th concession of the Township of Peel.

5.—The Township of Erin.

6.—The Township of Pilkington, and the 11th and 12th concessions of the Township of Nichol; the Municipality of the Village of Elora, and lots Nos. 19 and upwards belonging to the 9th, 10th, 11th, 12th, 13th, 14th, 15th and 16th concessions of Peel.

7.—Concessions 1 to 16, inclusive, of the Township of Maryboro' and concessions 1 to 16, inclusive, of the Township of Peel, except lots 19, 20, 21, 22 and 23 of those concessions in that township.

8.—That part of the Township of Arthur south and southeast of lot 15, on the west side of the Owen Sound Road, in the Township of Arthur: that part of the Township of Luther from 1 to 16, both inclusive; and lots 1 to 12, both inclusive, of the 17th and 18th concessions of the Township of Peel: lots 5 to 11, both inclusive, of the 19th concession of said Township of Peel: and lots 19 to 23, both inclusive, of concessions A and B of said Township of Peel.

10.—The Township of Minto.

11.—The Town of Mount Forest, and that part of the Township of Arthur north of lot 16, west of the Owen Sound Road: lot 17, on the Owen Sound Road, and lot 13, east of the Owen Sound Road.

WENTWORTH.

C. G. Snider, Judge, Hamilton.

J. G. Gauld, J.J., Hamilton.

S. F. Washington, C.C.A., and C.P., Hamilton.

1.—All that part of the Township of Barton lying east of the lines between lots 14 and 15, and all that part of Hamilton City east of Hughson street.

2.—The whole of the Township of Flamboro' West, the Town of Dundas, and the east half of the Township of Ancaster.

3.—The whole of the Township of Flamboro' East.

4.—The whole of the Township of Beverly and the west half of the Township of Ancaster.

5.—The whole of the Township of Saltfleet.

7.—The whole of the Township of Glanford.

8.—The whole of the Township of Binbrook.

9.—All that part of the Township of Barton lying west of the lines between lots 14 and 15, and that part of Hamilton City west of Hughson street.

YORK.

John Winchester, Judge, Tooronto.

E. Coatsworth, J.J., Toronto.

F. M. Morson, J.J., Toronto.

J. H. Denton, J.J.
R. H. Greer, C.C.A., Toronto.
H. E. Irwin, C.P., Toronto.
Toronto City.—Crown Attorney, J. W. Seymour Corley.

1.—The City of Toronto east of Yong street, at date 14th September, 1875 (i.e., Bloor, Sherbourne and Howard streets on the north, the Don on the east, down to Queen street, and south of Queen street as far as Lee avenue).

2.—Concessions 5 and 11, inclusive, of the Township of Markham, and concessions 5 to 10, inclusive, of the Township of Whitchurch, from 1 to 10, inclusive, together with the Villages of Markham and Stouffville.

3.—Concessions 1 to 4, inclusive, of the Township of Markham, and concessions 1 to 4, inclusive, of the Township of Whitchurch, from lots 1 to 10, inclusive, and concessions 1 to 3, inclusive, of the Township of Vaughan.

4.—The Township of Whitchurch, from the line between lots 10 and 11 northward; and the Township of East Gwillimbury.

5.—The Townships of Geoorgina and North Gwillimbury.

6.—The Township of King and the incorporated Village of Aurora.

7.—Concessions 4 to 11, inclusive, of the Township of Vaughan.

8.—All that portion of the Township of York lying west of Yonge street, and the Township of Etobicoke.

9.—Township of Scarboro' and all that portion of the Township of York which lies east of Yonge street and the Village of Leslieville.

10.—The city of Toronto, west of Yonge Street, at date of 10th September, 1875 (i.e., Bloor street on the north and Dufferin street on the west).

DIVISION COURT TARIFF.

Form I.

1.—CLERK'S FEES.

1. Receiving claim, numbering and entering in procedure book ..... (This item to apply to entering in the procedure book a transcript of judgment from another Court but not an entry made for the issue of a judgment summons.)	$ 25
2. Issuing summons, with necessary notices and warnings thereon, or judgment summons (as provided in forms) in all.	
Where claim exceeds $10 and does not exceed $20	50
Where claim exceeds $20 and does not exceed $60	60
Where claim exceeds $60 and does not exceed $100	80
Where claim exceeds $100 ..... (N.B.—In replevin and interpleader suits the value of goods to regulate the fee.)	1 50
3. Copy of summons, including all notices and warnings thereon	25
4. Copy of claim (including particulars), when not furnished by plaintiff	25
5. Copy of set-off or counterclaim or notice of defence (including particulars), when not furnished by defendant..... (Note.—In either of the last two preceding items the fee may be taxed against the party ordered to pay costs.)	25
6. Receiving and entering bailiff's return to any summons, writ or warrant issued under the seal of the Court (except summons to witness and return to summons or paper from another division)	15
7. Taking confession of judgment ..... (This does not include affidavit and oath, chargeable under item 8.)	10
8. Every necessary affidavit, if actually prepared by the clerk, and administering oath to the deponent	25
9. Furnishing duly certified copies of the summons and notices and papers with all proceedings, for purposes of appeal, as required by either party, per folio of 100 words	05
10. Certificate therewith	25
11. Certifying under seal of the Court and delivering to a judgment creditor a memorandum of the amount of judgment and costs against a judgment debtor, or garnishee, under The Creditor's Relief Act, or for any other purpose	25
12. Copies of papers, for which no fee is otherwise provided, necessarily required for service or transmission to the Judge, each	10
If exceeding two folios, per folio	05
13. Every notice of defence or admission entered, or other notice required to be given by the Clerk to any party to a cause or proceeding, including mailing, but not postage	15
14. Entering final judgment by Clerk, on special summons, where claim not disputed.	
Where claim does not exceed $60	50
Where claim exceeds $60	75

15. Entering every judgment rendered at the hearing, or final order made by the Judge.
Where claim does not exceed $60 50
Where claim exceeds $60 75
(Note.—this fee does not apply to any proceeding on judgment summons.)
(These fees will include the service of recording at the trial and afterwards entering in the procedure book the judgment, decree and order in its entirety, rendered or made at the trial. If a garnishee proceeding before judgment, these fees will be allowed for the judgment in respect to the primary debtor, and like fees for the adjudication, whenever made, in respect to the garnishee.)
16. Subpœna to witness 25
(The subpœna may include any number of names therein and only one original subpœna shall be taxed, unless the Judge otherwise orders.)
17. For every copy of subpœna required for service 10
18. Summons for jury (including copy for each juryman), when required by parties 1 25
19. Calling and returning jury ordered by the Judge 25
20. Every order of rereference, or order for adjournment, made at hearing, and every order requiring the signature of the Judge, and entering the same, including final order on judgment debtor's examination.. 25
(Any warning necessary with order forms part of the order.)
21. Transcript of judgment to another Division Court 50
22. Every writ of execution, warrant of attachment, or warrant of commitment, and delivering same to bailiff.
Where claim does not exceed $60 50
Where claim exceeds $60 and does not exceed $100 75
Where claim exceeds $100 ..... 1 00
23. Renewal of every summons or writ of execution, when ordered by the judgment creditor, or warrant of commitment, when ordered by judge 25
24. Every bond, when necessary, and prepared by the Clerk (including affidavits of justification and of execution) 1 00
25. Transmitting transcript of judgment; or transmitting papers for service to another division; or to the judge, on application to him, including necessary entries and mailing, but not including postage 25
26. Receiving papers from another division for service, entering the same, handing to the bailiff, receiving and entering his return and transmitting the same (if return made promptly, not otherwise) 30
27. Search by a person not a party to the suit or proceeding to be paid by the applicant 10
Search by a party to the suit or proceeding, where the suit or proceeding is over one year old 10
(No fee is chargeable for search to a party to the suit or proceeding, if the same is not over one year old.)
28. Taxing costs, in defended suits, after judgment pronounced 25
29. Making out statement of costs in detail (including bailiff's fees) at the request of any party 10
(Neither item 28 nor 29 applies to statement of costs endorsed on summons or copy to be served.)

30. Taxing bailiff's costs, under section 178 of the Division Courts Act ... 25
31. Every necessary letter written to any party to any cause, matter or proceeding in the court 15

(A letter shall not be considered necessary when a notice contains the same information.)

2.—BAILIFF'S FEES.

1. Service of summons issued under the seal of the Court, or Judge's summons or order on each person, except summons to witness and summons to juryman:
   Where claim exceeds $10 and does not exceed $20 ..... $0 40
   Where claim exceeds $20 and does not exceed $60 50
   Where claim exceeds $60 and does not exceed $100 75
   Where claim exceeds $100 ..... 1 00

   (In interpleader suits the value of the goods to regulate the fee.)
2. For every return as to service under item 1; attending at the clerk's office and making the necessary affidavit 15
3. Service of summons on witness or juryman, or service of notice 25
4. Taking confession of judgment and attending to prove 10
5. For calling parties and their witnesses at the sitting of the court in every defended case, and at the hearing of every judgment summons. 15
6. Enforcing every writ of execution or summons of replevin, or warrant of attachment or warrant against the body, each:
   Where claim does not exceed $20 65
   Where claim exceeds $20 and does not exceed $60 ..... 1 00
   Where claim exceeds $60 ..... 1 50

   (Where good replevied, the value of goods to regulate the amount of the fee. This fee does not include service of summons in replevin on defendant.)

   Fees under Creditor's Relief Act (see section 188 of 10 Edw., cap. 32; and section 26 of R.S.O. cap. 48, 9 Edw. VII.) shall be taxed according to the tariff.
7. Every mile or fraction of a mile necessarily travelled to serve summons, or process, or other necessary papers, or in going to seize on a writ of execution, where money, paid on demand, or made on execution, or case settled after seizure 15
8. Mileage going to arrest under warrant, when arrest made, per mile or fraction of a mile 15
9. Mileage carrying delinquent to prison, including all expenses and assistance, per mile, or fraction of a mile 25
10. Every schedule of property seized, attached, or replevied, including affidavit of appraisal, when necessary:
    Exceeding $10 and not exceeding $20 30
    Exceeding $20 and not exceeding $60 50
    Exceeding $60 75
11. Every bond, when necessary, when prepared by the bailiff, including affidavit of justification and execution 1 00
12. Every notice of sale, not exceeding three, under execution, or under attachment, each 25

13. Reasonable allowances and disbursements, necessarily incurred in the care and removal of property:
   (*a*) If a bailiff removes property seized, he is entitled to the necessary disbursements, in addition to the fees for seizure and mileage.
   (*b*) If he takes a bond, then to $1.00 instead of disbursements for removal of property.
   (*c*) If assistance is necessary in the seizure, or securing, or retaining of property, the bailiff is entitled to the disbursements for such assistance.
   (*d*) All charges for disbursements are o be submitted to the clerk for taxation, subject to appeal to the Judge.
   (*e*) The bailiff must in all cases endorse a memorandum of all his charges on the back of the execution, or state them on a separate slip of paper, so that the clerk may conveniently tax the bailiff's charges for fees and disbursements.
   (*f*) The clerk in all cases to sign the memorandum of his taxation and preserve it among the papers in the cause, together with the execution, for future reference, and thereby enable the clerk to certify the bailiff's returns properly.
14. If execution or process in attachment in the nature of execution be satisfied in whole or in part, after seizure and before sale, whether by action of the parties or otherwise, the bailiff shall be entitled to charge and receive 3 per cent. on the amount directed to be levied; or on the amount of the value of the property seized, whichever shall be the lesser amount.
15. Poundage on executions, and on attachments in the nature of executions, 5 per cent., exclusive of mileage for going to seize and sell, upon the amount realized from property necessarily sold.

3.—FEES TO WITNESSES AND APPRAISERS.

Allowances to Witness.

Attendance, per diem, to witnesses within three miles of the place where the Court is held, if within the county	$0 75
And if without the county	1 00
Attendance, if witness resides over three miles from the place of sittings and within the county, per diem	1 00
Attendance, if witness resides without the county and more than three miles of the place of sittings, per diem	1 50
Barristers and solicitors, physicians and surgeons, engineers and veterinary surgeons, other than parties to the cause, when called upon to give evidence of any professional service rendered by them, or to give professional opinions, per diem	4 00

(Note.—Disbursements to surveyors, architects and professional witnesses, such as are entitled to specific fees, by statute, are to be taxed, as authorized by such statute.

If witnesses attend in one case only, they will be entitled to the full allowance.

If they attend in more than one case, they will be entitled to a proportional part in each case only.)

The travelling expenses of witnesses, over three miles, shall be allowed according to the sums reasonably and actually paid, but in no case shall exceed 20 cents per mile, one way.

FEES OF APPRAISERS.

Fees to Appraisers of Goods, etc., seized under Warrant of Attachment.

To each appraiser, $1.00 per day, during the time actually employed in appraising goods—to be paid in the first instance by plaintiff and allowed as costs in the cause.

FEES IN SUITS NOT EXCEEDING $10.

(Section 48, D.C. Act.)

Clerk.

For all services, from entering action, or suing out a judgment or interpleader summons, up to and including the entering of final judgment, or final order on any such judgment or summons, in case the action proceeds to judgment or final order $1 25

In case the action does not proceed to judgment or final order, the fees heretofore, or that may hereafter be payable, but not exceeding in the whole the said sum.

For issuing writ of execution, warrant of attachment, or warrant for arrest of delinquent and entering the return thereto 50

Bailiff.

For all services rendered in serving summons and making return, and any other service that may be necessary before the judgment is entered by the clerk or pronounced by the Judge, mileage excepted 50

For enforcing execution, schedule of property seized, or attached, bond where necessary, and all other necessary acts done by him, after seizure, mileage excepted, if money made or case settled, after levy.. 1 00

(Necessary disbursements incurred in the care and removal of property shall be allowed to be first allowed by the clerk, subject to the approval of the Judge.)

REPORT

OF THE

Inspector of Legal Offices

ONTARIO

1918

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

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1919

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To His Honour Sir John Strathearn Hendrie, K.C.M.G., C.V.O., a Colonel in the Militia of Canada, etc., etc.,

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned begs respectfully to present to Your Honour the Annual Report of the Inspector of Legal Offices for the year ending 31st day of December, 1918.

I. B. Lucas,

Attorney-General.

Toronto, March 19th, 1919.

REPORT

OF THE

Inspector of Legal Offices

ONTARIO, 1918

To His Honour Sir John Strathearn Hendrie, K.C.M.G., C.V.O., a Colonel in the Militia of Canada, etc., etc.,

Lieutenant-Governor of the Province of Ontario.

Sir,—I have the honour to present the Annual Report of the Inspector of Legal Offices upon the affairs of the Judicial Offices of the Province of Ontario for the year ending December 31st, 1918.

A list of officers appointed during the year, with the date of the publication of each appointment in the *Ontario Gazette,* will be found in Appendix "L" to this report.

Sheriffs.

By Section 41 of *The Sheriffs' Act,* as enacted by 4 George V, chapter 21, section 4, and amended by section 8 of *The Statute Law Amendment Act* of last session, a Sheriff whose net income for the year does not exceed the sum of $1,800.00, may, on the report of the Inspector of Legal Offices be paid out of the Consolidated Revenue Fund an amount sufficient to make up his income for the year to $1,800.00.

Of the 48 County and District Sheriffs, 28 are entitled to payments under this Statute.

Section 5 of *The Public Officers' Fees Act* provides that every Sheriff may retain his net income up to $6,500.00, but shall pay to the Province 90 per cent. of the excess over that sum. During 1918 two Sheriffs only came within the provisions of this enactment.

The attention of the Sheriffs is directed to the changes made in the *Jurors' Act* by the Statute of last session, 8 George V, chap. 23, and to the fees provided by section 7 of said Statute, also to Schedules "A" and "B" to the Statute, 8 George V, chap. 25, which amends *The Administration of Justice Expenses Act,* R.S.O. chap. 96.

Appendix "A" sets out in tabulated form the Statistical Returns of the Sheriffs for the year 1918.

Local Masters.

The majority of the offices are held by the Judges of the County and District Courts. Their duties were generally well performed. Some are not as prompt as they should be in making their annual returns.

Local Masters may take examinations in the Supreme Court as Special Examiners provided they were appointed prior to September 15th, 1913, on which date a commission was directed by the Supreme Court Judges to be prepared and issued whereby all Local Masters then holding office were appointed Special Examiners.

In the case of those Masters appointed since that date they may not act as Special Examiners until a commission in their favour has issued.

The following are the fees chargeable in Winding Up proceedings under *The Winding Up Act,* R.S.O., chap. 144:

On every fyling	.10
On any certificate	.50
If over three folios, for every folio	.20
Making and certifying copies per folio	.10
Appointments	.50
Per hour while attending reference	1.50
Drawing report, per folio	.20
Engrossing report	.10
Fee on report (First report only)	2.00
Oath	.20
(No charge made for marking exhibits)	
On every order	1.00

In Appendix "B" is set out in tabulated form the statistical returns of the Local Masters for the year 1918 from which it will be seen that the business of the year was very light.

Local Registrars, Deputy Registrars, Deputy Clerks of the Crown, County and District Court Clerks.

In a few offices the fylings and the praecipe for entering actions had not been stamped.

Notwithstanding the remarks in my former reports papers continue to be transmitted to the office of the Registrar instead of to the Central Office in Osgoode Hall.

In transmitting the papers the list of exhibits properly signed is often omitted.

The Judgment Clerk has also had to complain of the neglect of some to make prompt return to him of the Judgments.

Unless more care is exercised, I shall be obliged unwillingly to make a special report on these subjects.

The Report and Papers in Criminal proceedings are still required to be transmitted to the Registrar's office, the practice contained in Rule 39 of *The Consolidated Rules of Practice,* 1897, is continued and regulated by analogy thereto—*see* Con. Rule 2 of the Consolidated Rules of Practice, 1913.

It is necessary to again remind the officers of the following directions of the Supreme Court Judges:

1. Where an action has been transferred from a County or Surrogate Court to the Supreme Court a memorandum should be added to the record showing this fact and the authority for the transfer, e.g.:

"This action was brought in the County (or Surrogate) Court of the County of and was transferred to the Supreme Court under section 22, subsection 3 of the *County Courts Act*—or, by order of the Honourable Mr. Justice A.B. under section 22, subsection 5 of the *County Courts Act*—or as the case may be." (June 25th, 1914.)

2. On the entry of judgment after trial the record shall be produced and fyled. (Nov. 10th, 1914.)

3. Orders made in Chambers dismissing actions shall be entered as orders and not as judgments. (Sept. 25th, 1916.)

4. Transmission of documents to Central Office:

When the Judge at a trial reserves judgment in any case, elsewhere than at Toronto, the Clerk of the Court shall forthwith forward the Record and Exhibits to the Central Office. (Dec. 17th, 1904.)

All Local Officers of the Court when sending papers or exhibits to the Central Office shall endorse on the wrapper enclosing such papers or exhibits, the short style of cause, the title of the Officer sending them, and the purpose for which they are sent, e.g., "Jones v. Smith. From Local Registrar at Brantford, for appeal to Divisional Court" or "For Mr. Justice Magee"—or as may be. (17th December, 1904.)

5. Setting down causes:

When a case is required to be set down for a Divisional Court, Weekly Court, or Chambers, the officer shall require the party desiring the case to be set down to endorse on the notice of motion the name of the office in which the action or proceeding was commenced, and the officer shall not set down any case without such endorsement unless otherwise ordered by the Court or a Judge. (17th December, 1904.)

The following letter was recently sent to a Local Registrar by the Senior Registrar at Osgoode Hall:

Dear Sir:

C—— vs. P——

"This case was recently before the Divisional Court and it became necessary for me, in order properly to settle the order made by the Divisional Court, to look at the record entered for trial, and I found that you had neglected to observe the regulation of the Judges in regard to the passing of records in that you omitted to add any certificate as to the state of the action against one of the defendants, Olive B——, I think was the name—*Mark the result*:

"The Judge who tried the action gave judgment against the defendants generally. You entered the judgment against all, and yet I am told that B—— was never even served with the Writ of Summons!

"Perhaps with this fact constantly in your mind you will, in future, see the practical necessity of observing the regulation in question of which I herewith send you a copy."

The regulation above referred to is as follows:

"Regulation for preventing causes being entered for trial, or hearing, before the same are in a fit state to be tried, or heard.

"Whereas it is necessary for the due administration of justice, and avoidance of delays and unnecessary expense, that Records entered for trial should show the state of the action against all the defendants, including those who have not appeared, or as against whom the pleadings have been noted closed, or any interlocutory, or final, judgment has been signed:

"Therefore, from and after the 1st day of January next (1900), all officers passing records are hereby directed, and required, to see that they contain, in addition to a certified copy of the pleadings, a note or memorandum stating

the state of the action as against every defendant or defendants who has, or have, put in no defence, or as against whom the action has been discontinued.

"No extra charge is to be made for such note or memorandum.

"All officers and clerks when entering causes for trial, or for hearing on motion for judgment, are required to see that the same are in a proper state for trial, or hearing, and are not otherwise to enter the same; and for that purpose may require either the production of the Record, or a certificate of the state of the action, when the necessary information cannot be obtained from their own books of office.

(Signed) J. A. Boyd, C. and P.
" J. D. Armour, C.J.Q.B.
" W. R. Meredith, C.J.C.P.

"October 28th, 1899.

Referring to the note at page 6 of my report for the year 1913, it is to be observed that since the date of that report the tariff item of $1.00, at page 209 of the tariff to The Consolidated Rules, was amended to read as follows:

"Writs, other than original Writs of Summons $1.00."

The fee for the *original* writ is $2.00, and for the concurrent Writ $1.00, $3.00 in all, and these whether or not both Writs were issued on the same day.

Appendix "C" is a return of the business of the High Court Division of the Supreme Court of Ontario in the offices of the Local Registrars, Deputy Registrars, and Deputy Clerks of the Crown, while Appendix "D" is a return of the business in the offices of the Clerks of the County and District Courts, for the year 1918.

Surrogate Registrars.

As a rule the Surrogate Registrars are careful and painstaking. In some offices, however, the copying was in arrear and in eleven the papers were not sufficiently stamped. The amount due the Province in this connection was $1,198.75 for which I caused law stamps to be affixed to the papers and cancelled.

Rule 735 was amended by adding Clauses (2) and (3) as follows: "(2) All money paid into a Surrogate or County Court and unclaimed for two years shall be transmitted by the Registrar or Clerk to the Accountant together with a statement showing when the money was paid in and a certified copy of all judgments or orders affecting the same.

(3) Such money shall be paid out to any person found entitled thereto upon the production of a judgment or order or the Surrogate or County Court Judge and shall in the meantime be dealt with as other money in the Supreme Court."

The above came into force October 1st, 1917, but as it was not published in *The Ontario Gazette* and was not brought to my attention the officers only recently received notice of it. I am advised by the Accountant that it will be sufficiently complied with if the officers will send to him a Statement of the Bank Manager, giving principal and interest due to date of transmission, in each case, together with a cheque in favour of the Accountant for the money.

It has become necessary to draw the attention of some of the Registrars to the following Order-in-Council:

"Copy of an Order-in-Council approved by His Honour the Lieutenant-Governor, the 9th day of May, A.D. 1914.

"Upon recommendation of the Honourable Mr. Hearst, Acting Attorney-General the Committee of Council advise that pursuant to the provisions of subsection 5, of section 73 of the *Surrogate Courts Act,* Cap. 62, R.S.O. 1914, the fees payable under subsection 4 of said section of said Act where the whole property of the deceased or of the ward consists of Insurance Money or of Insurance Money and wearing apparel although General Letters Probate, General Letters of Administration or Letters of Guardianship are sought shall be apportioned between the Judge and the Registrar in the following manner, namely, one-fourth to the Judge and three-fourths to the Registrar, said apportionment to take effect as from the 16th day of April, 1912.

Certified,

(Signed) J. Lonsdale Capréol,
Clerk, Executive Council."

Appendix "E" gives in tabulated form the business of the Surrogate Courts for the year 1918.

County and District Crown Attorneys and Clerks of the Peace.

The Crown Attorneys have not all been prompt in making returns of the fines received by them from sheriffs, magistrates and others.

The Order-in-Council of September 30th, 1915, sets out very clearly and concisely their duties with regard to fines imposed by the Magistrates and Justices in their respective jurisdictions. Nevertheless, fines are being paid to the municipalities that properly belong to the Province, and which it is the duty of the Crown Attorney to see that he receives. They are required to peruse the returns of convictions received by them quarterly from the Magistrates and Justices. Too frequently these returns are never looked over and are left to some clerk to copy into the books. Where fines have been wrongly paid to a municipality, the Crown Attorney must take steps to recover the same.

The following is a sample of correspondence unnecessarily occasioned where officers could themselves look up the law instead of imposing the task upon this rather busy office:

To a Crown Attorney:—

Dear Sir:

The fine to which you refer would seem to have been imposed under the Loafer Law, the Order-in-Council relating to which I have located at the end of the pamphlet containing the Food Laws of Canada. If you will look at section 4 of this Order-in-Council you will find the statement as to the disposition of fines thereunder.

Appendix "K" shows in tabulated form the business of the Courts of General Sessions of the Peace, and of the County and District Court Judge's Criminal Courts of the Province for the year 1918.

General Remarks.

The following letter was sent to all the officers on instruction from the Honourable the Attorney-General. It is still applicable and my instructions are that it must be adhered to strictly:

Dear Sir:

I am instructed by the Honourable the Attorney-General to inform you that in future no increase is to be made in the salaries of your Deputies, Clerks or Assistants without first obtaining the approval of the Inspector, and also that the like approval as to salaries to be paid must be obtained whenever any new appointments are made to your staff.

Yours truly,

(Signed) Jas. W. Mallon,
Inspector.

Notwithstanding the receipt of this letter many of the officers paid no attention to it, with the result that much correspondence and frequent conferences with the Department followed.

If officers will, in future, read my circular letters they will be saved considerable anxiety.

As stated in former reports the vault accommodation is in many cases quite inadequate for the needs of the County.

The sums payable in respect of their incomes under R.S.O. Cap. 17, amounted to $46,507.00, as follows:

Sheriffs	$1,865 18
Local Registrars and Deputy Clerks of the Crown	40,895 18
Crown Attorneys and Clerks of the Peace	3,746 64

Appendix "F" is a statement of the fees and emoluments of the officers for the year ending December 31st, 1918, and of the sources from which they derive their incomes.

In Appendix "G" I have set out the more important business of the High Court Division of the Supreme Court of Ontario, transacted at Toronto, during the year 1918, compiled from statements received from the officers at Osgoode Hall.

Appendix "H" shows the number of actions tried, or otherwise disposed of, by the Justices of the High Court Division, and of the Divisional Courts of the Appellate Division, of the Supreme Court of Ontario, and the disposition thereof, during the year 1918; while Appendix "J" shows the Criminal business of the High Court Division of the Supreme Court of Ontario at its sittings throughout the Province for the same period.

Appendix "I" is a statement of the business transacted in the office of the Surrogate Clerk, Osgoode Hall, for the year 1918.

Appendix "K" shows in tabulated form the business of the Courts of General Sessions of the Peace, and of the County and District Court Judge's Criminal Courts of the Province for the same period.

I have the honour to be,

Sir,

Your obedient servant,

Jas. W. Mallon,
Inspector.

Osgoode Hall, Toronto, March 19th, 1919.

APPENDICES

APPENDIX A.—Containing in tabulated form Statistics as returned

Counties or Districts.	Number of writs of summons received for service		Number of subpœnas received for service in—				Number of orders for arrest.		Number of other process.		Total process received.	
			Criminal Cases.		Civil Cases.							
	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.
Algoma	43	59	11	22	1	2	1	2	22	11	78	96
Brant	26	48	25	91	.....	1	.....	.....	10	1	32	66
Bruce	16	23	3	9	2	.....	.....	.....	2	.....	23	32
Carleton	152	168	2	.....	5	9	.....	.....	36	10	196	187
Dufferin	4	10	2	5	.....	.....	.....	.....	.....	3	6	18
Elgin	13	36	.....	1	.....	.....	.....	.....	2	.....	15	37
Essex	94	100	9	21	2	.....	.....	.....	21	4	126	125
Frontenac	17	35	4	5	1	1	.....	.....	6	1	28	42
Grey	8	16	3	6	.....	.....	.....	.....	1	.....	13	22
Haldimand	4	20	.....	14	1	16	.....	.....	2	.....	7	50
Halton	4	16	.....	8	.....	.....	.....	.....	2	.....	6	24
Hastings	48	52	13	35	1	1	.....	.....	4	6	66	94
Huron	5	15	2	7	1	2	.....	.....	1	1	9	25
Kenora	5	8	.....	1	.....	1	.....	.....	4	1	9	11
Kent	25	61	1	15	1	1	.....	.....	18	3	46	79
Lambton	11	38	4	18	2	.....	.....	.	.....	.....	17	56
Lanark	10	13	6	2	.....	1	.....	.....	.....	1	16	17
Leeds and Grenville	10	25	1	16	1	.....	.....	1	.....	5	12	47
Lennox and Addington	11	10	2	.....	.....	1	.....	.....	3	.....	16	11
Lincoln	20	37	4	17	1	1	.....	.....	8	7	33	65
Manitoulin	1	6	.....	.....	.....	.....	.....	.....	1	.....	2	6
Middlesex	35	77	5	29	10	5	1	.....	17	20	68	131
Muskoka	4	8	1	10	.....	.....	.....	.....	.....	.....	5	18
Nipissing	11	18	4	4	.....	.....	.....	.....	2	2	17	24
Norfolk	11	9	1	16	1	.....	.....	.....	1	.....	14	25
Northumberland and Durham	11	12	.....	17	.....	1	.....	.....	2	1	13	31
Ontario	20	17	1	6	.....	.....	.....	.....	7	.....	28	23
Oxford	16	27	.....	10	.....	1	.....	.....	.....	3	16	41
Parry Sound	5	23	3	8	.....	1	.....	.....	3	3	11	35
Peel	9	21	.....	15	.....	.....	.....	.....	8	5	17	41
Perth	14	25	4	14	.....	2	.....	.....	1	6	19	47
Peterborough	20	27	5	1	6	5	.....	.....	3	2	34	35
Prescott and Russell	8	10	.....	1	.....	1	.....	.....	.....	1	8	13
Prince Edward	8	13	.....	.....	.....	.....	.....	.....	2	.....	10	13
Rainy River	8	19	3	29	.....	.....	.....	.....	2	4	13	52
Renfrew	7	27	2	3	.....	1	1	.....	1	1	11	32
Simcoe	7	24	4	10	.....	.....	.....	.....	2	1	13	35
Stormont, Dundas and Glengarry	20	39	2	3	.....	1	1	.....	5	3	28	46
Sudbury	31	138	62	103	1	2	.....	.....	4	26	98	269
Temiskaming	21	67	4	12	2	2	.....	.....	11	9	38	90
Thunder Bay	54	18	6	5	.....	.....	.....	.....	27	1	87	24
Victoria	9	14	.....	.....	.....	.....	.....	.....	.....	.....	9	14
Waterloo	20	39	9	6	.....	.....	.....	.....	12	5	41	50
Welland	40	52	4	40	3	.....	2	.....	9	.....	58	92
Wellington	21	26	.....	2	.....	.....	.....	.....	6	4	27	32
Wentworth	131	181	10	106	19	17	.....	.....	45	39	187	343
York	37	69	.....	516	1	7	.....	21	14	10	52	623
Toronto	660	749	43	44	44	15	2	.....	202	133	951	941
Totals	1,765	2,545	265	1,303	106	98	8	24	529	333	2,629	4,239

by the different Sheriffs for the year ending 31st December, 1918.

Number of persons served.		Estreats received.		Number of jurors summoned.		Number of writs of execution received.			Number of renewals of writs of execution against— Goods and Lands.		
S.C.	C.C.	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.	D.C.	S.C.	C.C.	D.C.
136	200	.....	.....	122	98	15	26	6	8	20	.....
73	141	.....	.....	122	122	9	34	13	1	3	4
33	70	.....	.....	122	122	7	14	8	2	3	1
281	243	.....	.....	292	120	64	127	17	36	40	.....
9	31	.....	.....	122	122	1	3	1	.....	1	.....
17	40	.....	.....	122	122	4	22	3	1	.....	2
224	235	1	.....	122	122	25	87	41	6	9	.....
36	61	.....	.....	122	98	8	30	9	.....	6	.....
27	45	.....	.....	122	122	8	25	13	2	1	1
14	55	.....	.....	122	218	2	11	3	.....	.....	.....
8	36	.....	.....	122	98	6	13	2	1	1	.....
166	287	.....	.....	122	122	3	51	11	7	7	.....
44	36	.....	.....	122	122	3	15	12	.....	3	.....
20	16	.....	.....	122	122	3	11	2	2	5	.....
40	117	.....	.....	121	120	9	33	9	1	4	.....
30	54	.....	.....	122	122	14	26	16	4	4	7
35	37	.....	.....	115	112	5	9	7	.....	.....	.....
14	113	.....	.....	122	218	8	16	3	2	2	.....
33	19	.....	.....	122	108	5	5	6	.....	.....	.....
50	121	.....	.....	122	122	24	28	6	.....	.....	.....
2	7	.....	.....	61	122	1	4	.....	.....	.....	.....
92	228	.....	.....	183	122	24	52	11	.....	2	.....
5	54	.....	.....	122	122	2	7	1	.....	.....	.....
25	26	.....	.....	104	.....	3	26	3	1	.....	.....
21	79	.....	1	122	122	4	17	7	.....	.....	.....
14	78	.....	.....	122	122	3	20	6	8	11	.....
37	48	.....	.....	122	122	12	23	5	2	8	1
22	66	.....	.....	122	122	7	17	8	.....	.....	.....
47	68	.....	.....	122	.....	3	19	.....	4	6	.....
19	82	.....	.....	122	122	5	9	7	1	1	.....
20	108	.....	.....	122	122	5	31	7	3	4	.....
84	42	.....	.....	122	122	6	12	4	.....	3	.....
9	41	.....	.....	122	122	5	17	3	.....	.....	.....
15	15	.....	.....	122	122	1	9	11	.....	2	1
15	48	.....	.....	122	122	5	14	.....	1	.....	.....
23	43	.....	.....	122	122	5	25	5	3	3	.....
.....	.....	.....	.....	106	106	8	42	14	.....	2	.....
49	55	.....	.....	165	98	10	33	8	.....	2	.....
88	221	.....	.....	122	87	8	63	6	.....	.....	.....
113	114	.....	2	124	98	35	102	27	2	3	.....
161	44	.....	.....	138	136	45	57	23	38	58	.....
.....	.....	.....	.....	98	98	6	15	1	3	.....	.....
89	68	.....	.....	119	119	18	38	5	10	15	.....
84	198	.....	.....	122	122	23	59	14	2	2	.....
24	37	.....	.....	122	122	6	21	5	.....	.....	.....
305	705	1	1	183	244	23	88	16	9	53	.....
71	2,356	.....	7	.....	372	27	62	16	20	22	.....
1,815	1,106	1	1	219	.....	282	517	64	163	275	.....
4,539	7,894	3	12	6,054	5,842	805	1,985	461	342	581	17

APPENDIX A.—Containing in tabulated form Statistics as returned by the

Counties or Districts.	Number of renewals of writs of execution against—					Number of writs of possession received		Number of writs Ca. Sa.	
	Lands only.			Goods only.					
	S.C.	C.C.	D.C.	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.
Algoma	2	1	9	1	1				
Brant			4	1	3	1	1		
Bruce			4						
Carleton			9			1	1		
Dufferin									
Elgin			1						
Essex			9			9	4		
Frontenac			1						
Grey			1						
Haldimand	1	1							
Halton									
Hastings			5				6		
Huron									
Kenora									
Kent			1			1	1		
Lambton									
Lanark			1						
Leeds and Grenville			5						
Lennox and Addington						1			
Lincoln									
Manitoulin									
Middlesex			1			2			
Muskoka				1	1				
Nipissing							2		
Norfolk						1			
Northumberland and Durham			14						
Ontario			1						
Oxford			1						
Parry Sound			1				1		
Peel							1		
Perth			4						
Peterborough									
Prescott and Russell									
Prince Edward									
Rainy River									
Renfrew									
Simcoe							2		
Stormont, Dundas and Glengarry			2			1			
Sudbury						2	2		
Temiskaming			4			2	1		
Thunder Bay			25				1		
Victoria									
Waterloo			2			1			
Welland						2	3		
Wellington									
Wentworth			18			1	1		
York			17	1		5	1		
Toronto	4	1	59			25	16		
Totals	7	3	199	4	5	55	44		

different Sheriffs for the year ending 31st December, 1918.—*Continued.*

Number of sales under writs of execution of					Seizures under writs of execution where no subsequent sale.			Number of Attendances to seize where no goods found.		Writs of execution on which money realized.			Cases under Creditors' Relief Act.	Certificates received under Creditors' Relief Act.
Goods.		Lands.												
S.C.	C.C.	S.C.	C.C.	D.C.	S.C.	C.C.	D.C.	S.C.	C.C.	S.C.	C.C.	D.C.		
.....	2	.....	1	1	.....	2	1	1	2	....	3	1	3	4
.....	1	.....	.....	.....	.....	4	.....	.....	2	1	10	1	1	....
4	.....	.....	1	.....	.....	.....	.....	1	1	4	8	....	6	12
.....	2	.....	3	.....	3	4	.....	3	4	4	39	....	5	....
.....	.....	.....	.....	.....	.....	.....	.....	1	.....	....	2	....	....	....
.....	....	.....	.....	.....	.....	.....	.....	.....	.....	3	14	1	2	....
1	.....	.....	.....	.....	3	16	1	3	8	3	34	7	2	1
.....	2	1	.....	.....	1	4	1	.....	.....	4	7	1	....	....
.....	.....	.....	.....	.....	.....	1	.....	3	11	2	6	1	....	....
.....	.....	.....	.....	.....	.....	1	.....	2	3	1	1	....	....	....
1	.....	.....	.....	.....	1	3	.....	2	4	2	7	....	....	....
.....	2	.....	.....	.....	.....	7	.....	.....	8	....	36	2	4	....
.....	1	.....	.....	.....	1	8	.....	.....	.....	1	9	....	1	....
.....	.....	.....	.....	.....	1	2	.....	1	.....	....	....	1	1	....
.....	1	1	.....	.....	2	6	.....	.....	4	1	12	2	1	1
.....	.....	1	2	.....	1	5	.....	.....	5	2	10	....	2	5
1	2	.....	.....	.....	.....	2	.....	1	1	5	3	....	....	....
.....	2	.....	.....	.....	2	6	1	4	4	2	8	1	2	11
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....	2	....	....
1	.....	1	2	.....	12	13	.....	1	2	14	12	....	11	1
.....	2	.....	.....	.....	.....	1	.....	.....	.....	....	4	....	....	....
1	2	1	.....	.....	15	6	.....	1	8	4	19	2	4	....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....
.....	.....	.....	.....	1	2	9	.....	.....	1	....	11	....	....	....
.....	.....	.....	.....	.....	.....	3	.....	.....	6	....	....	....	....	....
.....	1	.....	.....	.....	1	8	.....	.....	5	1	9	....	....	....
1	.....	.....	.....	.....	6	16	.....	5	3	4	12	....	1	....
1	.....	1	.....	.....	1	3	.....	.....	1	2	4	1	....	....
.....	.....	.....	.....	.....	1	1	.....	.....	1	1	8	....	....	....
.....	.....	.....	.....	.....	.....	3	.....	2	2	....	4	....	....	....
1	3	.....	.....	.....	1	7	.....	2	5	2	22	1	4	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	1	....	....	....
.....	1	.....	.....	.....	1	1	.....	.....	1	3	3	....	2	....
.....	5	1	.....	.....	.....	.....	.....	.....	.....	1	5	....	....	....
.....	2	1	.....	.....	1	2	.....	.....	2	5	10	1	2	2
2	1	.....	.....	.....	1	2	.....	.....	.....	2	7	....	1	1
.....	.....	.....	.....	.....	2	10	.....	1	20	2	10	....	1	1
.....	4	.....	.....	.....	1	14	.....	.....	.....	2	15	....	....	....
.....	.....	.....	.....	.....	1	10	.....	.....	.....	2	11	....	....	....
2	6	.....	.....	.....	5	8	.....	1	2	7	14	....	6	....
4	3	.....	2	.....	3	7	4	6	4	6	12	4	13	17
.....	2	.....	.....	.....	1	1	.....	.....	1	....	6	....	....	....
.....	.....	.....	1	.....	4	15	.....	6	8	1	26	....	4	....
1	2	.....	.....	1	2	5	.....	1	3	6	15	2	4	4
.....	.....	1	.....	.....	1	2	.....	.....	3	4	3	....	....	1
1	1	.....	1	.....	6	36	.....	2	14	2	19	1	7	....
.....	.....	1	.....	.....	4	12	.....	5	16	3	14	1	4	....
6	9	5	1	.....	.....	.....	.....	.....	.....	32	98	6	28	11
28	59	15	14	3	87	266	8	55	165	142	583	39	122	74

APPENDIX A.—Containing in tabulated form Statistics as returned by the

Counties or Districts.	Assignments made to Sheriff under R.S.O. cap. 134.	Returns received under R.S.O. cap. 266, sec. 37.	Sales of Lands under R.S.O. cap. 266, sec. 37.	Amount endorsed on Writs of Execution (not renewals). For debt or damages S.C.	For debt or damages C.C.	For debt or damages Div. Co.	For costs taxed. S.C.	For costs taxed. C.C.	For costs taxed. Div. C.
				$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Algoma	....	6	1	68,477 13	11,009 15	622 29	1,408 71	918 50	35 16
Brant	1	....	....	1,414 73	8,956 60	1,112 29	278 80	1,229 20	41 32
Bruce	....	....	1	128,918 34	3,308 04	602 47	189 16	314 09	58 33
Carleton	....	....	....	220,552 41	18,948 16	1,971 64	4,354 30	1,609 42	23 80
Dufferin	....	....	....	184 00	2,165 63	92 80	.....	206 11	4 85
Elgin	....	....	....	4,356 75	3,633 99	348 07	204 05	583 81	5 18
Essex	2	....	....	94,197 73	27,562 70	4,082 86	.....	839 72	.....
Frontenac	....	....	....	4,673 50	7,518 51	568 36	366 59	1,185 87	13 06
Grey	....	....	1	20,897 56	8,124 80	1,252 70	924 87	707 00	78 87
Haldimand	....	....	....	2,763 90	3,780 17	369 72	85 60	315 10	28 73
Halton	....	....	....	18,098 67	4,950 87	407 54	358 20	331 55	5 18
Hastings	6	....	....	8,005 63	13,921 34	1,166 85	64 30	1,511 39	182 78
Huron	....	....	....	3,771 50	2,952 27	1,049 26	253 60	239 82	44 53
Kenora	1	4	1	48,301 55	2,552 52	165 60	77 65	366 50	15 66
Kent	2	....	1	17,303 02	9,542 72	1,193 46	466 25	1,022 67	51 68
Lambton	....	....	....	16,450 31	6,170 84	1,153 44	672 20	854 64	72 52
Lanark	....	....	....	4,452 92	2,647 95	707 98	294 86	286 28	36 84
Leeds & Grenville	....	....	....	13,659 64	3,882 48	312 87	350 15	637 67	23 04
Lennox & Addington	1	....	....	15,090 15	1,137 85	712 35	243 78	123 44	19 37
Lincoln	1	....	3	15,259 41	12,081 70	688 95	496 72	1,125 52	45 12
Manitoulin	....	....	....	2,163 59	1,123 18	.....	34 16	94 10	.....
Middlesex	....	....	....	41,763 41	15,590 33	907 19	1,946 04	1,836 94	115 49
Muskoka	....	....	....	1,319 00	1,383 27	164 98	523 53	167 20	.....
Nipissing	....	....	....	14,999 74	5,078 62	222 03	69 20	803 28	26 63
Norfolk	....	....	....	3,939 33	4,066 48	1,017 83	100 96	310 90	35 14
Northumberland and Durham	....	....	....	10,015 35	5,646 39	849 38	73 60	545 51	39 48
Ontario	1	....	....	21,020 27	8,064 74	349 76	970 41	520 40	28 56
Oxford	....	....	....	5,803 18	5,253 10	1,139 33	583 95	635 38	51 08
Parry Sound	....	2	1	2,799 67	4,680 87	.....	292 65	417 12	.....
Peel	....	....	....	4,554 90	1,281 56	582 00	420 28	122 99	37 09
Perth	....	....	....	6,108 23	8,478 52	434 32	142 48	1,531 80	72 04
Peterborough	....	....	....	12,160 32	3,373 60	306 66	161 37	359 82	19 01
Prescott & Russell	....	....	....	5,673 00	4,864 60	259 64	841 10	792 65	54 30
Prince Edward	....	....	....	1,570 80	2,275 47	1,122 77	46 20	72 45	35 44
Rainy River	....	2	....	45,964 18	5,020 32	.....	531 08	577 67	.....
Renfrew	....	....	....	176,581 90	9,117 67	493 92	268 28	655 68	16 90
Simcoe	1	....	....	52,172 66	14,752 45	1,842 60	1,164 90	1,365 20	187 50
Stormont, Dundas and Glengarry	....	....	....	25,639 24	12,210 58	752 94	290 10	1,071 65	57 12
Sudbury	4	....	....	13,100 25	17,792 95	851 80	571 74	1,937 34	34 06
Temiskaming	....	5	1	87,352 00	38,728 02	1,950 32	3,432 47	3,118 59	192 48
Thunder Bay	....	....	....	360,985 70	18,808 70	1,969 48	2,092 58	2,238 00	172 97
Victoria	....	....	....	2,719 45	3,098 05	80 38	37 35	418 65	90
Waterloo	....	....	....	58,805 84	10,885 57	420 37	2,772 68	1,048 28	29 52
Welland	....	....	....	42,476 03	14,053 91	1,875 33	1,557 69	2,499 57	.....
Wellington	1	....	....	4,640 98	6,023 12	626 94	218 83	563 47	23 87
Wentworth	....	....	....	30,164 19	21,678 44	1,362 41	2,677 95	3,466 85	151 66
York	....	....	....	67,245 60	51,761 41	1,572 48	2,039 59	1,704 65	113 08
Toronto	....	....	....	1,314,042 56	160,706 36	6,679 60	21,626 17	17,894 61	515 61
Totals	21	19	10	3,122,610 22	610,646 57	46,415 96	56,577 13	61,179 05	2,755 95

different Sheriffs for the year ending 31st December, 1918.—*Concluded.*

Amounts realized under writs of execution from sales of						Amount received for fines, penalties, etc.	Amount received (not fees) under Fi. Fas. without sale, goods and lands.		
Goods.			Lands.						
S.C.	C.C.	Div.C.	S.C.	C.C.	Div. C.		S.C.	C.C.	Div. C.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
.....	1,055 00	.....	.....	32 50	140 58	.....	2,717 88	1,807 49	185 06
.....	443 00	.....	.....	.....	.....	610 85	612 55	1,096 02	145 75
7,736 20	1,245 37	.....	.....	.....	210 00	.....	.....	2,088 62	.....
.....	517 16	.....	.....	835 00	.....	.....	5,010 71	7,533 57	180 82
.....	.....	.....	.....	.....	.....	.....	.....	634 62	.....
.....	.....	.....	.....	.....	.....	.....	2,190 35	1,707 40	211 24
398 00	.....	.....	.....	.....	.....	2,000 00	3,051 29	5,748 24	1,059 77
.....	700 00	.....	2,000 00	.....	.....	.....	578 01	1,369 48	58 95
.....	.....	.....	.....	34 60	.....	.....	227 15	1,517 58	98 00
.....	.....	.....	.....	.....	.....	43 26	700 00	.....	.....
594 00	.....	.....	.....	.....	.....	.....	29 93	916 64	.....
.....	165 00	.....	.....	.....	.....	202 67	.....	4,937 20	100 40
.....	64 50	.....	.....	.....	.....	500 00	569 30	1,986 87	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	11 25
.....	172 75	.....	.....	125 00	.....	50 00	.....	2,103 64	.....
.....	.....	.....	50 00	90 00	.....	.....	1,509 45	2,062 21	.....
121 50	388 90	.....	.....	.....	.....	.....	.....	355 04	.....
.....	561 60	.....	.....	.....	.....	.....	3,163 34	1,310 90	103 55
.....	.....	.....	.....	.....	.....	.....	101 83	.....	115 83
.....	284 00	.....	8,450 00	1,660 00	.....	.....	15,190 16	3,369 95	.....
.....	390 00	.....	.....	.....	.....	.....	.....	488 20	.....
1,500 00	353 16	.....	350 00	.....	.....	1,500 00	606 17	3,971 36	141 56
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	12 00	1,450 37	.....	665 97	.....
.....	.....	.....	.....	.....	.....	1,500 00	17 20	687 53	.....
.....	415 00	.....	.....	.....	.....	.....	31 00	2,259 75	.....
330 97	.....	.....	.....	.....	.....	694 53	4,338 00	2,739 57	.....
.....	126 85	.....	.....	200 00	.....	.....	1,037 60	198 38	91 47
.....	.....	.....	.....	.....	.....	.....	202 50	627 69	.....
.....	.....	.....	.....	.....	.....	.....	.....	981 60	.....
285 00	1,944 73	.....	.....	.....	.....	574 50	2,024 48	3,444 26	45 00
.....	.....	.....	.....	.....	.....	.....	.....	34 16	.....
.....	150 00	.....	.....	.....	.....	.....	2,356 13	514 47	.....
.....	934 27	.....	400 00	197 00	.....	.....	.....	10 15	.....
.....	800 00	.....	1,950 00	.....	.....	200 00	3,808 49	3,037 93	128 09
2,310 86	28 75	.....	.....	.....	.....	.....	.....	1,383 14	.....
.....	165 50	.....	.....	.....	.....	25 00	5,220 80	1,461 57	.....
.....	1,567 25	.....	.....	.....	.....	441 35	93 96	5,280 94	.....
.....	.....	.....	.....	.....	.....	.....	1,633 80	3,089 90	.....
2,458 00	1,168 00	.....	.....	.....	.....	200 00	2,859 29	4,257 32	.....
1,889 05	274 80	.....	.....	363 00	.....	.....	602 20	1,019 94	369 36
.....	910 20	.....	.....	.....	.....	.....	.....	510 57	.....
18 00	.....	.....	.....	448 26	.....	.....	.....	2,806 81	.....
413 71	225 75	.....	.....	.....	126 00	.....	3,153 16	6,480 57	737 94
.....	.....	.....	218 00	.....	.....	.....	638 55	1,198 18	.....
423 75	5 45	.....	.....	52 55	.....	.....	240 97	3,977 35	79 21
.....	.....	.....	923 75	.....	.....	1,086 25	305 66	2,043 46	53 50
3,167 25	2,775 45	.....	6,450 00	50 00	.....	250 00	13,913 24	16,957 70	717 75
21,646 29	17,832 44	.....	20,791 75	4,087 91	488 58	11,328 78	78,735 15	110,673 94	4,634 50

APPENDIX B.—Being a return of business transacted by Local Masters through-

County or District.	Number of Orders made for the following purposes:					Examinations taken as special examiner or otherwise before trial.
	For administration of estates.	For partition or sale of property.	Respecting Infants under R.S.O., Cap. 153, Sec. 5 (Examination only).	Under Winding-up Acts.	Other Orders made in chambers.	
Algoma						
Brant						
Bruce						
Carleton	1	1			153	65
Dufferin					400	
Elgin						39
Essex						
Frontenac					3	
Grey					5	1
Haldimand						
Halton						
Hastings				2	20	
Huron						
Kenora						1
Kent						
Lambton					10	
Lanark						
Leeds and Grenville	1	2			10	
Lennox and Addington	4				5	
Lincoln		1			1	
Manitoulin						
Middlesex				7	19	8
Muskoka						
Nipissing						
Norfolk						
Northumberland and Durham					10	
Ontario						
Oxford						
Parry Sound					1	
Peel					1	
Perth	1	1		3	9	
Peterborough		2		3	14	
Prescott and Russell						
Prince Edward						
Rainy River						
Renfrew					30	
Simcoe						
Stormont, Dundas and Glengarry					6	
Sudbury						1
Temiskaming						
Thunder Bay						
Victoria					1	
Waterloo						
Welland						
Wellington				3	14	27
Wentworth					23	
Totals	7	7		18	735	142

out the Province of Ontario during the year ending 31st December, 1918.

Number of Judgments or Orders brought into the Master's Office for taking the following accounts, etc.

Administration of estates.	Executors', trustees' or committees' accounts and compensation.	Foreclosure of mortgage or bond.	Redemption of mortgage or bond.	Sale under mortgage or agreement.	Account on any charge or liens on lands other than mechanics' liens.	Accounts under Mechanics' Lien Act.	Specific performance.	Partnership accounts.	Alimony.	Partition or sale.	Damages for breach of contract or covenant.
.....	.....	3	.....	1	.....	.....	.....	.....	1	.....	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	1	48	.....	5	.....	.....	.....	2	.....	2	.....
.....	.....	610	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	1	8	.....	2	.....	3	.....	2	.....	.....	.....
1	1	3	.....	.....	.....	.....	.....	.....	.....	3	.....
1	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	2	.....	9	.....	.....	.....	1	.....
.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
1	2	.....	.....	.....	.....	.....	.....	1	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	1	.....	.....	.....	.....	.....	1	.....	2	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	1	7	.....	1	.....	.....	.....	1	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	.....
.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
1	2	4	.....	1	.....	.....	.....	.....	.....	1	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	5	.....	.....	1	.....	.....	.....	.....	.....	.....
.....	.....	11	.....	1	.....	1	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	3	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	1	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
1	1	9	1	1	.....	6	.....	1	1	1	.....
25	14	734	2	15	2	19	.....	11	2	16	1

APPENDIX B.—Being a return of business transacted by Local Masters through-

County or District.	Number of Judgments or Orders.—Con-						
	Work and labor done.	Money received, paid, advanced, or lent.	Goods sold and delivered.	Promissory notes and bills of exchange.	Bonds, life and fire insurance.	Infants' estates.	Quieting Title matters.
Algoma							
Brant							
Bruce							
Carleton		1					2
Dufferin							
Elgin							
Essex							4
Frontenac							
Grey							1
Haldimand							
Halton							
Hastings							
Huron							
Kenora							
Kent							
Lambton	1						
Lanark							
Leeds and Grenville							
Lennox and Addington							
Lincoln							
Manitoulin							
Middlesex							
Muskoka							
Nipissing							
Norfolk							
Northumberland and Durham							
Ontario							
Oxford							
Parry Sound							
Peel							
Perth							
Peterborough							
Prescott and Russell							
Prince Edward							
Rainy River							
Renfrew							
Simcoe							
Stormont, Dundas & Glengarry							
Sudbury							
Temiskaming							
Thunder Bay							
Victoria							
Waterloo							
Welland							
Wellington							
Wentworth							
Totals	1	1					7

out the Province of Ontario during the year ending 31st December, 1918.—*Concluded.*

tinued.									
Lunacy.	Miscellaneous.	Number of advertisements of sale issued.	Number of reports issued.	Number of references pending at date of return.	Number of bills of cost taxed by Master.	Amount realized by sales held under direction of Master.	Amount of costs of reference, etc., taxed by Master or under his direction.	Amount of commission allowed in administration and partition matters.	Amount of fees earned by Local Masters during the year.
						$ c.	$ c.	$ c.	$ c.
.....	1	.....	.....	4	3	.....	.....	.....	201 70
1	1	.....	.....	2	2	75 00	.....	31 50	46 50
.....	.....	.....	.....	1	.....	.....	.....	.....	6 50
1	7	5	44	15	50	7,750 00	3,669 29	180 00	2,208 00
.....	210	.....	.....	.....	.....	.....	.....	.....	12 20
1	1	.....	5	.....	.....	38 00	.....	.....	544 38
2	3	2	14	15	18	2,300 00	946 59	.....	329 05
3	.....	1	5	4	3	3,000 10	.....	325 00	248 06
.....	1	.....	.....	.....	.....	.....	2,310 60	.....	186 15
1	.....	.....	.....	2	.....	.....	53 05	.....	11 80
.....	.....	.....	2	1	1	.....	.....	.....	18 68
.....	1	2	7	.....	7	179 25	1,615 80	418 00	834 30
1	1	.....	1	2	.....	.....	.....	.....	50 40
.....	.....	3	6	1	3	1,575 00	373 29	.....	212 58
1	.....	.....	.....	.....	1	.....	162 27	.....	5 60
.....	1	.....	1	1	.....	.....	.....	.....	359 60
.....	.....	.....	5	3	4	2,000 00	522 62	.....	46 43
1	.....	3	8	3	6	10,445 00	366 11	863 97	156 70
.....	.....	4	9	3	7	14,995 00	397 28	1,292 10	229 90
2	.....	1	3	.....	2	3,550 00	.....	212 50	109 60
.....	.....	.....	1	.....	1	.....	.....	.....	7 00
3	13	.....	24	9	15	.....	1,029 48	.....	523 54
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	2	.....	1	1,217 44	.....	125 00	10 90
.....	.....	.....	.....	.....	.....	.....	.....	.....	13 10
.....	1	.....	2	3	1	.....	102 12	.....	108 80
2	1	.....	5	1	.....	.....	.....	.....	187 50
.....	.....	.....	2	.....	.....	.....	.....	.....	38 30
.....	.....	.....	.....	.....	.....	.....	.....	.....	1 30
.....	.....	.....	.....	2	.....	8,500 00	.....	.....	41 40
1	.....	3	5	4	5	1,167 54	1,295 60	300 00	242 70
1	.....	1	10	2	8	800 00	901 09	561 45	404 90
.....	.....	1	2	1	2	3,700 00	394 93	217 37	44 40
.....	.....	.....	.....	.....	.....	.....	.....	.....	20 80
.....	2	.....	1	2	.....	.....	.....	.....	83 90
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	1	1	1	.....	195 45	.....	.....	43 11
.....	2	.....	9	2	5	.....	378 84	.....	121 70
.....	1	1	9	2	9	1,400 00	.....	.....	111 70
.....	.....	.....	1	.....	1	.....	48 98	.....	7 60
.....	.....	.....	3	6	.....	.....	.....	.....	96 40
1	.....	.....	4	1	4	.....	107 88	.....	36 70
.....	.....	2	4	1	3	3,630 00	2,594 89	213 50	129 00
.....	1	.....	4	1	3	.....	.....	.....	71 00
.....	3	2	9	9	4	2,246 38	2,629 14	134 35	383 08
1	3	1	23	11	12	.....	3,336 09	.....	802 60
24	254	34	231	115	181	68,674 16	23,235 94	4,874 74	9,349 56

APPENDIX C.—A return of all business transacted by Local Registrars, 31st Dec

County or District.	Writs of summons issued.	Orders for arrest issued.	Actions entered in Procedure Book.			*Præcipe* orders issued.	Orders issued and signed by Local Judge.	Examination of parties returned.	Records passed.	Actions entered for Trial.		Actions tried.		Workmen's Compensation Actions tried.	
			Writs issued during year.	Writs issued during previous years.	Otherwise than by Writ.					With Jury.	Without Jury.	With Jury.	Without Jury.	With Jury.	Without Jury.
Algoma	57	....	39	....	4	1	45	9	9	2	7	1	....	....	....
Brant	48	....	32	2	1	1	24	16	12	3	13	2	5	....	....
Bruce	26	....	23	1	2	3	19	13	9	3	6	2	2	....	....
Carleton	335		220	24	2	17	16	82	37	7	40	3	35	....	....
Dufferin	8	....	7	....	3	....	2	3	2	1	2	1	2	....	....
Elgin	39	....	32	3	2	1	17	1	15	10	7	3	2	....	....
Essex	163	....	137	2	24	11	118	118	61	24	63	9	53	....	....
Frontenac	31	....	25	4	2	4	18	21	9	1	7	....	5	....	....
Grey	34	....	23	....	1	....	....	17	9	1	9	....	9	....	....
Haldimand	4	....	3	....	....	....	....	1	3	1	3	1	3	....	....
Halton	3	....	....	....	....	....	4	....	....	....	1	....	....	....	....
Hastings	75	....	56	2	....	5	8	21	24	14	33	1	14	....	....
Huron	34	....	24	1	2	2	10	9	16	1	15	....	15	....	....
Kenora	9	....	10	....	1	2	3	2	3	....	3	....	3	....	....
Kent	38	....	33	6	1	2	30	11	18	10	8	4	4	....	....
Lambton	24	....	20	2	14	....	....	15	5	1	8	1	8	....	....
Lanark	22	....	20	2	....	....	3	1	2	....	2	....	2	....	....
Leeds and Grenville	37	....	30	1	6	....	17	12	12	2	10	....	3	....	....
Lennox and Addington	13	....	10	2	5	1	2	9	6	1	5	1	5	....	....
Lincoln	37	....	31	3	2	....	12	23	13	3	11	1	10	....	....
Manitoulin	3	....	3	3	....	2	....	....	....	....	....	....	....	....	....
Middlesex	123	....	79	2	29	24	55	74	41	16	29	4	20	....	....
Muskoka	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....
Nipissing	12	....	8	1	....	....	3	7	2	....	2	....	2	....	....
Norfolk	21	....	16	1	2	7	2	8	7	7	3	1	1	....	....
Northumberland and Durham	22	....	16	1	....	3	14	6	5	....	7	....	4	....	....
Ontario	30	....	23	5	4	1	9	8	4	4	4	2	1	....	....
Oxford	25	....	16	....	1	2	4	8	5	2	3	1	2	....	....
Parry Sound	3	....	3	....	2	....	....	8	3	1	2	1	2	....	....
Peel	13	....	8	....	....	....	1	8	1	....	2	....	1	....	....
Perth	33	....	33	1	6	1	4	14	10	2	8	1	7	....	....
Peterborough	32	....	26	1	11	1	2	16	8	....	8	....	5	....	....
Prescott and Russell	12	....	6	1	....	1	4	2	1	....	1	....	1	....	....
Prince Edward	6	....	5	1	....	....	3	5	5	2	3	2	2	....	....
Rainy River	17	....	17	1	6	6	17	....	11	5	9	....	4	....	....
Renfrew	18	....	13	....	1	1	2	1	2	2	2	1	....	....	....
Simcoe	31	....	22	....	....	....	5	8	4	1	3	....	3	....	....
Stormont, Dundas and Glengarry	48	....	36	2	5	....	3	1	6	8	5	6	4	....	....
Sudbury	48	....	35	3	3	2	30	....	9	5	6	3	2	....	....
Temiskaming	50	....	40	6	17	1	43	21	14	4	12	....	2	1	....
Thunder Bay	95	....	71	3	7	4	54	15	2	....	12	....	4	....	....
Victoria	17	....	14	1	....	1	6	3	1	....	1	....	1	....	....
Waterloo	54	....	46	3	9	1	22	17	15	3	18	....	5	....	....
Welland	62	....	48	....	14	1	18	4	10	6	6	4	4	....	....
Wellington	32	....	....	....	....	8	20	....	4	2	5	1	2	....	....
Wentworth	225	....	158	3	39	7	78	43	53	27	42	13	37	....	....
Totals	2069	....	2517	94	228	124	747	661	488	183	447	70	296	1	....

Deputy Registrars and Deputy Clerks of the Crown for the year ending ember, 1918.

Remanets. standing for trial.		Judgments entered without trial.	Amount of such Judgments, without costs.	Amount of costs taxed thereunder (exclusive of Disbursements).	Amount of disbursements allowed.	Judgments entered after trial.	Amount of such Judgments, without costs.	Amount of costs taxed thereunder (exclusive of Disbursements).	Amount of disbursements allowed.	Number of Judgments for over $10,000.	Number of Judgments for $10,000 and above $5,000.
With Jury.	Without Jury.		$ c.	$ c.	$ c.		$ c.	$ c.	$ c.		
....	7	12	31,818 52	386 00	108 36	7	12,939 09	507 26	137 90	1	2
....	1	12	15,474 32	431 00	88 05	4	2,094 93	438 60	62 75	....	1
....	3	7	29,419 82	255 50	128 93	1	.....	38 00	120 00	1	....
2	6	140	577,650 85	5,535 26	1,164 50	27	21,221 62	2,278 45	274 70	10	13
....	....	....	.....	.....	.....	....	.....	.....	.....	....	....
1	2	5	7,605 51	196 60	53 90	3	1,339 66	.....	.....	....	....
....	4	24	102,738 30	1,192 13	1,176 73	40	21,171 06	7,224 38	2,470 73	2	2
....	3	5	7,492 81	107 20	37 20	9	20,566 37	1,157 00	508 01	1	1
....	1	4	1,059 76	34 00	11 53	4	1,253 75	.....	.....	....	....
....	....	1	5,226 95	94 00	25 50	3	2,540 00	.....	.....	....	....
....	....	....	.....	.....	.....	....	.....	98 70	103 30	....	....
8	12	8	11,111 90	208 95	36 53	6	600 00	.....	.....	....	1
....	1	2	8,001 50	57 50	21 01	6	598 02	173 50	24 50	....	....
....	....	2	3,889 44	50 00	16 55	2	4,035 90	.....	.....	....	....
1	....	8	14,466 35	230 20	75 90	3	2,600 00	321 00	255 00	....	....
....	....	6	6,478 16	156 00	74 98	6	4,740 05	409 50	159 20	....	....
....	....	3	5,563 82	88 80	19 70	1	.....	120 50	115 01	....	....
....	....	12	22,523 15	658 60	211 16	4	2,000 00	370 20	259 15	1	....
....	1	7	4,074 92	87 20	34 05	5	4,340 30	632 90	299 47	....	....
....	2	9	7,858 74	290 08	45 88	8	2,441 00	1,936 99	949 44	....	....
....	....	6	9,178 21	233 17	98 35	....	.....	.....	.....	....	....
2	3	22	42,429 14	713 85	247 66	27	16,341 31	1,765 55	301 99	....	4
....	....	....	.....	.....	.....	....	.....	.....	.....	....	....
....	....	7	14,031 73	141 50	56 70	1	3,133 75	.....	.....	....	....
....	1	2	3,260 52	107 65	22 55	2	1,000 00	.....	.....	....	....
....	1	4	33,984 70	94 10	21 95	3	1,900 00	215 00	.....	1	....
....	....	6	5,935 48	152 00	31 79	2	.....	263 00	511 65	....	....
....	....	1	2,008 35	30 00	9 50	1	3,853 87	.....	.....	....	....
....	....	2	3,708 97	55 00	16 37	.....	.....	.....	.....	1	....
....	....	1	5,849 51	.....	.....	....	.....	.....	.....	1	....
1	....	8	7,720 76	263 40	65 30	5	2,960 80	362 40	36 25	....	....
....	2	17	21,486 32	439 70	115 46	3	.....	145 00	149 93	....	....
....	....	4	3,936 38	84 00	25 00	2	.....	.....	.....	....	....
....	....	2	3,100 33	56 00	17 88	1	583 00	180 55	103 45	....	....
2	2	3	733 58	.....	.....	2	1,400 00	100 00	.....	....	....
....	....	4	150,633 58	139 00	34 70	....	.....	.....	.....	3	....
1	....	5	18,957 31	134 65	39 70	....	.....	.....	.....	1	....
2	....	14	34,034 81	391 00	137 95	9	4,500 00	1,845 08	121 87	....	....
....	....	17	12,784 70	400 09	63 00	8	5,829 75	1,102 88	124 90	....	....
4	8	22	106,680 57	681 62	148 90	7	5,782 70	526 30	120 40	2	....
....	2	32	291,700 21	920 20	261 66	15	64,078 91	631 96	37 15	10	4
1	7	4	7,464 14	232 80	36 00	1	.....	.....	.....	....	....
1	2	14	47,785 54	356 92	105 56	10	9,166 30	1,373 10	108 83	3	2
1	1	14	53,325 02	500 60	104 85	10	6,536 95	1,219 50	134 30	1	....
1	2	9	10,872 41	.....	.....	8	6,806 00	.....	.....	....	....
3	5	45	112,404 90	1,328 11	347 24	25	95,545 22	2,009 57	470 40	4	1
31	79	532	1,866,461 99	17,514 38	5,338 53	281	333,900 31	27,446 87	7,960 28	43	31

APPENDIX C.—A return of all business transacted by Local Registrars, 31st Dec.

County or District.	Number of Judgments for $5,000 and above $2,000.	Number of Judgments for $2,000 and above $1,000.	Number of Judgments for $1,000 and above $400.	Number of Judgments for $400 and under.	Number of Judgments dismissing actions.	Number of Judgments in default of appearance or pleading.	Number of Judgments under Con. Rule 57.	Number of Judgments for reference to Master.	Number of Writs of Execution issued.	Number of Writs of Execution renewed.	No. of Writs of *Ca. Sa.* issued.	Number of Certificates issued under Creditors' Relief Act.	Amount for which issued, without costs.
													$ c.
Algoma	2	3	4	2	....	12	3	1	14	5	....	....	.....
Brant	1	5	3	5	1	7	....	....	5	....	....	....	.....
Bruce	2	3	....	2	....	5	....	....	5	....	....	....	.....
Carleton	29	20	16	5	14	140	....	53	61	38	....	....	.....
Dufferin	....	....	....	....	....	....	....	....	1	....	....	....	.....
Elgin	....	6	....	2	2	4	....	2	....	1	....	....	.....
Essex	8	13	3	36	6	20	1	4	27	6	....	....	.....
Frontenac	....	....	6	....	1	....	....	5	3	2	....	....	.....
Grey	....	2	4	....	1	3	1	3	6	5	....	....	.....
Haldimand	....	1	1	....	1	1	....	....	....	....	....	....	.....
Halton	....	....	....	....	1	....	....	....	....	....	....	....	.....
Hastings	2	1	2	4	2	4	2	3	1	6	....	....	.....
Huron	2	....	....	6	....	2	....	2	2	3	....	....	.....
Kenora	1	....	1	....	....	2	....	....	2	....	....	....	.....
Kent	3	5	2	1	3	8	....	....	5	2	....	....	.....
Lambton	1	4	4	3	....	6	3	1	7	3	....	....	.....
Lanark	1	1	1	....	1	3	....	1	3	....	....	....	.....
Leeds and Grenville	2	6	1	....	....	1	1	12	....	5	6	1	.....
Lennox and Addington	2	2	2	....	6	1	....	7	....	5	4	1	.....
Lincoln	1	5	2	1	5	7	....	2	5	1	....	....	.....
Manitoulin	1	4	1	....	....	6	....	....	....	....	....	....	.....
Middlesex	6	8	7	7	4	20	....	13	26	2	....	....	.....
Muskoka	....	....	....	....	....	....	....	....	....	....	....	....	.....
Nipissing	5	....	1	....	....	5	....	2	1	....	....	....	.....
Norfolk	....	1	1	....	....	2	....	....	....	....	....	....	.....
Northumberland and Durham	2	2	....	1	1	4	....	1	....	1	....	....	.....
Ontario	1	2	1	....	....	6	....	2	4	1	....	....	.....
Oxford	2	....	....	....	....	....	....	....	2	....	....	....	.....
Parry Sound	1	....	....	1	....	2	....	....	1	3	....	....	.....
Peel	....	....	....	....	....	....	....	....	....	1	....	....	.....
Perth	....	5	4	4	....	6	2	....	7	2	....	....	.....
Peterborough	6	4	1	2	1	13	....	7	7	1	....	....	.....
Prescott and Russell	1	2	....	3	....	3	1	....	2	....	....	....	.....
Prince Edward	....	2	....	....	....	2	....	1	....	....	....	....	.....
Rainy River	....	1	1	....	1	....	....	....	3	....	....	....	.....
Renfrew	....	1	....	....	....	3	....	....	2	1	....	....	.....
Simcoe	1	1	2	....	....	3	....	....	6	....	....	....	.....
Stormont, Dundas and Glengarry	10	3	3	3	1	13	....	6	14	1	....	....	.....
Sudbury	3	5	1	3	....	16	....	12	7	....	....	....	.....
Temiskaming	8	8	6	1	3	19	1	2	20	1	....	....	.....
Thunder Bay	5	6	6	1	2	12	....	1	39	28	....	....	.....
Victoria	2	1	2	....	....	4	....	....	....	....	....	....	.....
Waterloo	4	7	2	2	1	13	....	5	13	4	....	....	.....
Welland	4	7	4	8	1	10	....	1	12	1	....	....	.....
Wellington	3	4	3	....	2	8	1	....	9	1	....	....	.....
Wentworth	13	14	11	27	4	28	14	10	36	14	....	....	.....
Totals	135	165	109	130	65	424	30	159	358	144	10	2	.....

Deputy Registrars and Deputy Clerks of the Crown for the year ending ember, 1918.—*Concluded.*

Amount of Costs allowed thereunder (including Disbursements).	Number of days of sitting of Judge with Jury.	Number of days of sitting of Judge without Jury.	Number of Estreats ordered to be issued.	Number of Estreats issued.	Amount of Jury fees paid County or Provincial Treasurer.	Amount of money paid into Court with defence.	Amount of money paid out of Court.	Fees collected in law stamps by Deputy Clerks and Local Registrars.
$ c.					$ c.	$ c.	$ c.	$ c.
.....	4	1	.....	.....	6 00	.....	.....	348 40
.....	2	5	.....	.....	9 00	.....	.....	273 40
.....	3	3	.....	.....	9 00	.....	.....	230 00
.....	3	25	.....	.....	21 00	2,817 81	.....	470 70
.....	.....	3	.....	.....	3 00	.....	.....	49 00
.....	4	1	.....	.....	24 00	.....	.....	256 40
.....	16	34	2	2	39 00	4,494 61	.....	1,376 80
.....	.....	6	.....	.....	3 00	35 00	.....	110 90
.....	7	4	.....	.....	3 00	628 00	.....	215 90
.....	5	.....	.....	.....	3 00	.....	.....	60 50
.....	.....	2	.....	.....	.....	.....	.....	19 90
.....	2	9	.....	.....	.....	395 00	.....	168 30
.....	2	3	.....	.....	3 00	.....	.....	198 10
.....	.....	2	.....	.....	.....	.....	.....	72 60
.....	4	2	.....	.....	30 00	.....	.....	386 15
.....	2	4	.....	.....	.....	.....	.....	181 20
.....	6	1	.....	.....	.....	.....	.....	104 40
.....	.....	4	.....	.....	6 00	.....	.....	281 30
.....	1	4	.....	.....	3 00	.....	.....	153 60
.....	7	5	.....	.....	9 00	.....	.....	292 30
.....	.....	.....	.....	.....	.....	.....	.....	42 50
.....	6	18	.....	.....	48 00	860 00	.....	171 35
.....	3	1	.....	.....	3 00	.....	.....	8 20
.....	2	1	.....	.....	.....	.....	.....	75 60
.....	.....	3	.....	.....	3 00	.....	.....	113 70
.....	.....	5	.....	.....	.....	.....	.....	166 90
.....	4	1	.....	.....	12 00	.....	.....	145 10
.....	1	5	.....	.....	6 00	.....	.....	127 00
.....	8	5	.....	.....	3 00	.....	.....	34 30
.....	.....	4	.....	.....	.....	.....	.....	47 70
.....	2	5	.....	.....	6 00	.....	.....	229 90
.....	5	1	.....	.....	.....	.....	.....	265 70
.....	.....	2	.....	.....	.....	16 90	.....	73 50
.....	5	2	.....	.....	6 00	.....	.....	70 50
.....	.....	6	.....	.....	18 00	.....	.....	138 90
.....	2	5	.....	.....	6 00	.....	.....	80 80
.....	.....	2	.....	.....	3 00	.....	.....	168 20
.....	6	1	.....	.....	24 00	.....	.....	298 60
.....	9	.....	.....	.....	15 00	300 00	.....	33 00
.....	4	2	.....	.....	.....	.....	.....	409 20
.....	1	1	.....	.....	12 00	1,430 00	.....	663 40
.....	.....	1	.....	.....	.....	.....	.....	88 70
.....	6	3	.....	.....	6 00	.....	.....	379 10
.....	5	1	.....	.....	12 00	.....	.....	390 00
.....	1	3	.....	.....	6 00	.....	.....	.....
.....	17	8	.....	.....	81 00	1,075 00	.....	1,477 40
.....	155	204	2	2	441 00	12,052 32	.....	10,949 10

APPENDIX D.—Being a return of business transacted by County and District

County or District.	Writs of summons issued.	Orders for arrest issued.	Actions entered in Procedure Book.			Præcipe orders issued.	Orders issued and signed by Local Judge.	Examination of Parties returned.	Records passed.	Actions entered for Trial with Jury.	Actions entered for Trial without Jury.	Number of actions tried with Jury.	Number of actions tried without Jury.	Workmen's Compensation Actions for Trial.	
			Writs issued during the year.	Do. previous years.	Otherwise than by Writ.									With Jury	Without Jury
Algoma	70	..	43	1	....	....	19	8	8	1	7	1	4	..	..
Brant	125	..	97	4	13	1	29	12	32	9	25	6	11	..	..
Bruce	49	..	29	2	11	2	24	12	10	4	6	3	5	..	..
Carleton	317	..	257	57	7	5	28	20	54	7	47	4	33	..	..
Dufferin	13	..	6	....	4	....	2	5	2	1	1	1	1	..	..
Elgin	63	..	40	5	9	2	17	3	10	3	7	1	1	..	..
Essex	146	..	114	5	37	2	68	46	54	14	43	4	38	..	..
Frontenac	86	..	62	8	7	3	12	34	28	....	28	....	21	..	..
Grey	47	..	38	1	2	....	.....	15	12	3	9	3	8	..	..
Haldimand	32	..	.....	4	1	....	7	7	9	1	8	....	8	..	..
Halton	13	..	8	....	....	....	10	....	6	3	3	1	1	..	..
Hastings	143	..	109	6	9	5	40	30	20	36	10	7	23	..	..
Huron	57	..	44	2	6	1	12	16	21	8	13	2	9	..	..
Kenora	23	..	24	....	3	2	9	....	6	....	7	....	7	..	5
Kent	75	..	51	1	....	....	9	6	18	5	13	1	12	..	..
Lambton	54	..	42	2	15	....	8	17	11	3	9	1	7	..	..
Lanark	32	..	27	....	....	....	1	3	5	....	5	....	5	..	..
Leeds & Grenville	73	..	46	1	2	2	13	18	10	....	10	....	10	..	..
Lennox & Addington	15	..	11	....	....	2	5	10	7	3	4	1	6	..	..
Lincoln	56	..	48	2	....	....	12	20	13	....	14	....	12	..	..
Manitoulin	6	..	4	....	....	....	.....	....	1	1	....	....	....	..	..
Middlesex	161	..	101	8	....	....	35	31	30	17	13	7	7	..	..
Muskoka	3	..	2	1	1	3	2	....	2	....	2	....	2	..	..
Nipissing	70	..	55	1	2	1	17	7	....	1	13	....	4	..	..
Norfolk	20	..	12	....	....	9	.....	9	4	4	3	2	1	..	..
Northumb'rl'd&Durham	40	..	19	....	....	....	5	2	6	1	5	1	4	..	..
Ontario	43	..	27	2	6	....	4	1	6	....	6	....	4	..	..
Oxford	30	..	18	6	3	....	8	10	11	1	10	1	9	..	..
Parry Sound	21	..	11	....	4	5	6	1	4	....	4	2	2	..	..
Peel	18	..	13	....	5	4	4	2	1	....	1	....	1	..	..
Perth	79	..	79	....	5	1	6	29	23	3	20	9	17	..	..
Peterborough	65	..	44	....	5	....	.....	19	16	6	9	3	9	..	..
Prescott and Russell	24	..	20	2	1	....	15	....	7	....	7	....	4	..	..
Prince Edward	17	..	10	....	....	....	7	7	4	1	3	....	4	..	..
Rainy River	28	..	22	1	8	1	17	....	6	....	6	....	4	..	..
Renfrew	30	..	25	3	1	1	1	2	6	1	5	....	2	..	..
Simcoe	83	..	40	2	....	....	19	9	24	9	15	7	13	..	..
Stormont, Dundas and Glengarry	62	..	37	6	4	5	9	....	6	1	9	1	7	..	..
Sudbury	190	..	123	21	3	1	69	....	59	2	59	1	37	..	..
Temiskaming	179	..	121	12	4	3	62	26	23	2	23	....	13	..	..
Thunder Bay	78	..	71	7	2	5	19	8	6	....	9	....	7	..	..
Victoria	37	..	30	....	5	1	6	4	7	1	7	....	3	..	..
Waterloo	59	..	50	8	1	....	17	22	10	4	7	1	6	..	..
Welland	77	..	59	4	14	....	7	14	18	6	12	2	12	..	..
Wellington	62	..	46	2	6	2	16	....	15	1	17	1	9	..	..
Wentworth	393	..	289	20	10	4	91	66	148	47	101	19	45	..	..
York	1,890	..	1,133	95	8	143	420	721	317	41	276	55	282	..	..
Totals	5,254	..	3,557	302	224	216	1,187	1272	1096	245	911	148	730	..	5

Court Clerks throughout the Province of Ontario for the year ending 31st December, 1918.

With Jury	Without Jury	Number of Remanets standing for Trial.	Number of Judgments entered without Trial.	Total amount of such Judgments without costs.	Total amount of Costs taxed thereunder (exclusive of Disbursements).	Total amount of Disbursements allowed.	Number of Judgments entered after Trial.	Total amount of such Judgments without costs.	Total amount of Costs taxed thereunder (exclusive of Disbursements).	Total amount of Disbursements allowed.	Number of Judgments $400 and under.	Number of Judgments dismissing actions.	Number of Judgments in default of appearance or pleading.	Number of Judgments under Con. Rule 57.
				$ c.	$ c.	$ c.		$ c.	$ c.	$ c.				
..	3	19	5,157 89	294 20	146 02	4	203 26	283 25	37 80	20	3	17	2
..	12	46	13,561 01	769 00	386 85	10	2,515 60	783 50	194 25	56	....	39	....
..	...	10	4,221 48	121 50	104 85	6	813 00	288 20	354 18	16	1	10	....
2	4	132	22,656 88	1,814 76	1,240 50	20	4,808 91	1,472 78	284 65	132	1	126	1
..	...	2	501 19	40 40	19 70	1	178 09	78 00	57 34	3	....	2	....
2	6	15	3,850 66	617 80	249 71	....	.....	.....	.....	15	....	14	....
1	8	47	14,528 09	1,227 66	382 46	38	5,230 22	3,263 86	682 45	85	18	42	1
..	7	32	7,333 87	677 55	256 00	9	1,726 00	679 00	311 02	38	2	1	....
..	1	16	5,182 78	255 80	122 67	4	951 83	128 40	30 95	18	2	16	....
1	2	13	4,613 36	190 25	117 65	4	1,447 03	211 95	84 28	17	....	13	....
..	...	4	1,508 53	114 70	46 50	....	.....	.....	.....	4	....	4	....
3	9	31	10,614 37	712 53	226 55	17	2,187 28	1,694 84	375 89	38	7	28	....
5	5	14	5,084 65	213 42	121 26	6	275 35	318 78	328 50	20	1	14	....
..	...	8	2,524 38	113 80	62 95	5	608 00	154 60	142 15	8	2	8	....
..	2	22	8,441 00	345 00	145 18	4	560 99	280 00	42 80	24	1	22	....
..	1	14	4,052 32	172 00	81 21	4	700 00	555 00	107 11	18	1	14	....
..	...	11	3,879 83	203 80	92 08	1	161 45	189 80	105 45	12	....	11	....
..	2	29	8,388 92	589 80	292 19	7	1,553 71	807 60	248 48	34	2	29	....
..	...	3	621 86	41 90	26 95	4	1,140 59	540 80	328 70	7	....	3	....
..	2	20	6,201 82	424 75	152 95	7	1,795 83	874 85	291 71	20	....	....	....
..	...	2	214 50	98 00	6 00	....	.....	.....	.....	2	....	1	....
..	4	53	16,564 16	629 17	458 75	15	2,089 49	981 40	306 28	58	6	50	3
..	...	1	150 00	.....	.....	2	150 00	.....	.....	2	....	....	....
..	1	26	7,632 93	356 40	205 15	4	594 00	160 00	36 65	30	....	25	1
..	...	2	427 27	46 96	17 00	....	.....	.....	.....	....	....	....	....
..	1	11	4,339 57	219 20	91 91	....	.....	.....	.....	11	....	11	....
1	...	12	3,373 96	184 50	73 93	3	1,096 00	128 00	18 30	14	1	12	....
..	2	11	3,745 67	201 90	109 64	5	1,758 13	519 25	169 65	15	1	11	....
..	...	14	4,378 04	221 10	145 87	2	287 00	50 00	.....	15	1	13	....
..	...	2	824 64	51 55	19 56	1	124 70	.....	.....	2	....	....	....
1	8	26	8,563 29	473 36	204 95	10	2,905 01	803 70	204 22	36	....	24	2
1	1	10	2,798 01	140 20	85 91	8	1,850 06	427 80	176 15	16	2	10	....
..	...	14	4,792 37	361 00	153 53	....	.....	.....	.....	14	....	12	2
..	...	8	2,651 33	172 20	84 90	4	561 00	410 20	264 18	11	1	8	....
..	2	18	5,882 29	445 50	140 40	10	1,939 42	.....	.....	22	4	13	....
..	...	17	5,086 13	231 30	137 95	....	.....	.....	.....	17	....	17	....
5	10	17	7,792 15	310 50	180 10	11	1,484 32	793 99	290 88	25	2	18	....
..	...	29	9,595 71	503 00	274 34	3	826 00	388 00	130 60	32	1	29	....
..	...	70	21,564 73	950 00	670 35	25	3,756 80	1,286 69	433 35	84	6	68	....
2	10	75	79,744 50	1,210 80	603 26	24	6,035 58	1,975 40	1,140 77	80	7	65	7
..	...	44	15,822 20	7,971 00	314 03	17	5,830 23	885 00	350 35	19	1	41	....
1	16	11	4,420 36	237 30	157 96	3	260 00	.....	.....	11	10	....	....
..	3	25	6,914 32	376 10	170 54	4	812 85	138 20	167 15	26	1	23	2
1	2	23	5,532 88	447 00	186 62	13	2,224 60	777 10	258 63	36	2	23	....
..	5	16	7,066 70	237 25	133 11	6	1,104 80	567 40	224 81	21	1	16	....
13	23	102	31,920 20	2,121 44	815 00	39	12,505 00	2,755 95	668 23	141	4	85	14
12	25	591	190,117 64	13,722 93	5,401 66	242	58,677 97	10,318 58	2,348 05	800	92	591	79
51	177	1718	584,840 44	40,580 28	15,116 65	602	133,670 04	35,971 87	11,195 96	2125	184	1579	114

APPENDIX D.—Being a return of business transacted by County and District

County or District.	Number of Judgments for reference to Master.	Writs of Execution issued.	Number of Writs of Execution renewed.	Number of Writs of *Ca. Sa.* issued.	Number of Certificates issued under Creditors' Relief Act.	Amount for which issued, without Costs.	Amount of Costs allowed thereunder (including Disbursements).	Number of days of sittings of County Court.	Amount of Jury Fees paid County or Provincial Treasurers.	Amount of money paid into Court with defence.
						$ c.	$ c.		$ c.	$ c.
Algoma	....	13	15	....	....	.....	.....	1 5	1 50	743 75
Brant	....	40	5	....	....	.....	.....	6 11	13 50	85 63
Bruce	....	16	3	....	3	37,973 39	27 25	1 6	6 00	410 00
Carleton	3	119	38	....	....	.....	.....	4 27	10 50	445 30
Dufferin	....	3	....	....	....	.....	.....	3 2	1 50	30 00
Elgin	....	17	1	....	....	.....	.....	3 2	4 50	593 10
Essex	1	72	10	....	1	1,924 80	.....	5 35	21 00	.....
Frontenac	....	11	3	....	....	.....	.....	... 18	.....	.....
Grey	....	19	3	....	....	.....	.....	6 10	4 50	21 00
Haldimand	....	13	1	....	....	.....	.....	4 5	1 50	.....
Halton	....	3	1	....	....	.....	.....	1 5	3 00	.....
Hastings	1	44	7	....	....	.....	.....	11 59	19 50	752 79
Huron	....	16	2	....	....	.....	.....	4 10	12 00	278 46
Kenora	1	6	2	....	....	.....	.....	... 8	.....	377 50
Kent	....	23	1	....	....	.....	.....	1 12	7 50	256 30
Lambton	....	18	6	....	....	.....	.....	3 3	4 50	74 82
Lanark	....	4	....	....	....	.....	.....	... 5	.....	30 00
Leeds and Grenville	....	22	....	....	....	.....	.....	... 12	.....	.....
Lennox and Addington	....	3	1	....	....	.....	.....	1 8	4 50	50 00
Lincoln	....	21	....	....	....	.....	.....	... 16	.....	320 37
Manitoulin	1	....	....	....	....	.....	.....	... ...	1 50	.....
Middlesex	....	52	6	....	....	.....	.....	5 10	25 50	30 00
Muskoka	....	2	....	....	....	.....	.....	... 2	.....	.....
Nipissing	....	33	3	....	....	.....	.....	... 8	.....	242 52
Norfolk	....	....	....	....	....	.....	.....	4 3	3 00	.....
Northumberland and Durham	....	10	6	....	....	.....	.....	3 8	1 50	358 00
Ontario	....	10	2	....	....	.....	.....	... 5	.....	155 50
Oxford	....	20	....	....	....	.....	.....	6 5	1 50	.....
Parry Sound	....	11	2	....	....	.....	.....	... 2	.....	140 25
Peel	....	2	2	....	....	.....	.....	3 5	.....	.....
Perth	....	40	5	....	....	.....	.....	6 11	4 50	195 14
Peterborough	....	8	8	....	....	.....	.....	13 15	9 00	588 26
Prescott and Russell	....	13	3	....	....	.....	.....	... 3	.....	128 37
Prince Edward	....	3	....	....	....	.....	.....	... 6	1 50	.....
Rainy River	....	11	....	....	....	.....	.....	... 11	1 50	400 00
Renfrew	....	11	4	....	....	.....	.....	3 7	1 50	300 90
Simcoe	....	29	6	....	....	.....	.....	21 22	21 00	121 80
Stormont, Dundas and Glengarry	....	31	2	....	....	.....	.....	1 7	1 50	358 15
Sudbury	3	63	....	....	....	.....	.....	1 47	.....	600 98
Temiskaming	2	69	4	....	2	12,901 27	42 00	... 14	1 50	868 48
Thunder Bay	....	65	31	....	....	.....	.....	... 4	.....	.....
Victoria	....	....	....	....	....	.....	.....	... 6	.....	20 00
Waterloo	....	29	5	....	....	.....	.....	2 10	4 50	20 35
Welland	....	26	2	....	....	.....	.....	4 9	9 00	208 45
Wellington	....	16	2	....	....	.....	.....	1 19	1 50	100 00
Wentworth	....	106	40	....	....	.....	.....	7 25	70 50	1,678 03
York	10	646	226	....	5	27,724 50	69 70	84 187	61 50	12,502 75
Totals	22	1789	458	....	11	80,523 96	138 95	218 710	337 50	23,486 95

Court Clerks in the Province of Ontario for the year ending 31st December, 1918.—*Concluded.*

Amount of money paid out of Court.	Number of Partition Matters.	Amount of money paid thereunder.	Amounts paid out.	Amount of moneys in Court in County Court matters, including interest (under Con. Rule 769).	Number of Chattel Mortgages and Bills of Sale filed.	Total amount secured by such mortgages.	Number of mortgages renewed.	Number of discharges filed.	Number of assignments for benefit of creditors.	Number of Hire Receipts, etc., filed under R.S.O. Cap. 136.	Total amount secured by such Receipts, etc.	Amount of fees collected in law stamps under Section 42 of the Creditors' Relief Act.
$ c.			$ c.	$ c.		$ c.					$ c.	$ c.
398 55	..	..	.....	.....	191	132,277 45	57	19	4	332	105,014 54	.....
494 32	..	..	.....	1,058 47	141	1,561,390 06	48	8	6	502	880,476 46	.....
825 65	..	..	.....	269 44	101	56,380 00	87	8	....	176	49,070 45	3 00
195 00	..	..	.....	425 30	223	344,630 94	93	19	28	699	295,391 45	.....
.....	..	..	.....	30 00	28	22,442 39	23	1	1	77	32,103 05	.....
282 44	..	..	.....	841 93	262	293,094 55	122	14	5	524	153,172 18	.....
500 82	..	..	.....	19,789 89	179	95,420 98	79	22	6	772	325,632 75	3 00
.....	..	..	.....	.....	186	144,815 37	61	5	1	276	31,509 11	.....
79 71	..	..	.....	.....	291	167,016 09	145	11	5	358	111,067 49	.....
.....	..	..	.....	.....	50	75,361 95	35	2	3	103	32,071 59	.....
.....	..	..	.....	.....	45	58,207 13	12	1	1	39	28,528 57	.....
858 74	..	..	.....	1,752 98	337	179,583 53	155	7	9	383	611,262 46	.....
228 46	..	..	.....	278 20	47	176,011 49	86	5	3	157	79,257 96	.....
377 50	..	..	.....	205 59	37	1,008,015 80	16	2	3	180	24,289 27	.....
75 00	..	..	.....	188 21	175	119,361 33	156	15	3	592	200,414 22	.....
610 81	..	..	.....	186 42	100	47,679 11	104	6	7	78	61,420 31	.....
228 44	..	..	.....	30 13	42	62,267 38	53	2	3	28	12,664 02	.....
.....	..	..	.....	773 00	107	63,194 79	111	10	2	246	60,308 40	.....
50 00	..	..	.....	.....	48	42,302 54	61	7	4	119	51,200 15	.....
195 57	..	..	.....	320 37	72	72,037 04	48	3	5	801	126,581 77	.....
.....	..	..	.....	.....	43	14,086 25	34	3	....	13	2,560 60	.....
1,318 48	..	..	.....	193 68	104	64,931 32	81	8	6	1,218	292,813 88	.....
.....	..	..	.....	.....	65	23,166 53	53	3	2	21	3,866 49	.....
242 52	..	..	.....	134 38	139	50,269 02	76	9	2	55	19,434 80	.....
.....	..	..	.....	357 31	89	32,139 42	74	5	....	192	73,846 42	.....
926 71	..	..	.....	5,236 78	94	62,164 62	125	14	....	207	92,973 56	.....
3,339 05	..	..	.....	10,205 20	135	177,929 31	80	3	2	432	142,040 01	.....
.....	..	..	.....	2,112 47	66	68,215 06	88	12	6	181	114,568 75	.....
76 25	..	..	.....	94 55	.....	357,746 02	22	5	1	53	14,956 30	.....
.....	..	..	.....	27 80	40	25,701 06	15	4	....	55	31,131 40	.....
899 49	..	..	.....	15	102	122,857 58	50	3	4	190	48,545 38	.....
307 75	..	..	.....	588 26	84	47,762 28	55	6	1	92	99,610 33	.....
128 37	..	..	.....	.....	133	147,545 81	41	8	2	23	9,203 74	.....
.....	..	..	.....	.....	39	23,319 21	53	5	....	35	22,131 89	.....
977 15	..	..	.....	56 75	87	46,309 55	29	13	1	124	38,744 89	.....
.....	..	..	.....	.....	63	222,438 15	74	4	3	77	116,011 70	.....
194 75	..	..	.....	392 91	183	336,755 56	121	7	10	346	299,747 49	.....
643 15	..	..	.....	.....	200	163,584 10	70	8	5	470	90,343 26	.....
941 81	..	..	.....	559 56	217	320,283 55	107	21	5	196	82,561 99	.....
753 48	..	..	.....	573 45	378	1,182,072 99	44	23	14	588	112,327 88	.....
.....	..	..	.....	5,380 23	145	368,335 49	59	14	6	844	357,515 74	.....
20 00	..	..	.....	.....	21	15,195 72	23	4	3	214	75,516 20	.....
73 26	..	..	.....	20 66	91	8,080,061 71	67	15	5	490	220,662 94	.....
209 75	..	..	.....	.....	139	369,228 27	47	13	6	299	112,333 17	.....
100 00	..	..	.....	2,794 04	149	138,983 69	58	8	7	174	133,722 39	.....
690 15	..	..	.....	1,632 63	301	3,772,640 55	127	26	20	1,707	708,108 62	.....
11,417 56	..	..	.....	18,173 60	1,187	1,761,325 00	334	101	84	5,456	1,626,824 00	.....
28,660 69	..	..	.....	74,684 34	6,956	22,716,537 74	3559	512	294	20,194	8,213,540 02	6 00

APPENDIX E.—Being a return of business transacted by Surrogate Registrars

County or District.	Total number of Probates issued.	Total number of Letters of Administration issued.	Total number of Letters of Guardianship issued.	Total number of Probates and Letters of Administration issued under R.S.O. Cap. 62, s. 73, ss. 1.	Total number of Probates and Letters issued under R.S.O. Cap. 62, s. 73, ss. 2.	Number of Wills proved istration or Guardianship alty valued as			
						$100,000, or over.	From $50,000 to $100,000.	From $25,000 to $50,000.	From $10,000 to $25,000.
Algoma	52	48	4	12	28	.....	.....	1	3
Brant	149	89	.....	23	33	2	.....	4	14
Bruce	144	57	.....	14	20	.....	.....	.....	15
Carleton	287	161	3	36	55	7	7	9	35
Dufferin	56	19	.....	6	6	.....	.....	.....	4
Elgin	132	69	1	14	24	.....	.....	3	12
Essex	145	96	4	19	29	.....	3	2	17
Frontenac	95	60	1	19	19	.....	1	4	5
Grey	195	71	.....	17	32	.....	.....	.....	13
Haldimand	60	30	.....	5	8	.....	1	2	2
Halton	59	46	.....	6	13	.....	.....	3	5
Hastings	128	95	1	24	24	2	2	3	14
Huron	211	83	2	25	29	.....	1	9	14
Kenora	10	19	.....	5	8	.....	.....	.....	.....
Kent	148	89	1	.....	29	1	.....	.....	8
Lambton	141	79	4	10	29	.....	1	5	10
Lanark	81	38	.....	2	11	.....	.....	2	4
Leeds and Grenville	167	84	2	26	31	1	3	5	9
Lennox and Addington	44	14	.....	2	8	.....	.....	1	3
Lincoln	96	54	1	17	16	2	2	2	9
Manitoulin	12	3	.....	.....	1	.....	.....	.....	.....
Middlesex	326	168	2	75	46	5	4	8	27
Muskoka	23	25	.....	10	7	.....	.....	.....	1
Nipissing	25	23	.....	.....	10	.....	1	.....	3
Norfolk	79	45	.....	20	19	.....	2	3	17
Northumberland and Durham	172	81	.....	16	33	1	1	6	18
Ontario	108	74	1	23	20	.....	1	1	10
Oxford	134	74	.....	12	37	.....	1	2	21
Parry Sound	31	25	1	6	12	.....	.....	.....	2
Peel	76	39	1	11	8	.....	1	.....	7
Perth	160	59	1	8	22	1	2	2	17
Peterborough	114	44	4	9	20	2	.....	3	11
Prescott and Russell	55	43	1	13	16	.....	.....	2	2
Prince Edward	59	27	.....	7	6	.....	.....	1	6
Rainy River	3	14	.....	6	4	.....	.....	.....	.....
Renfrew	66	34	2	22	22	1	.....	1	9
Simcoe	225	92	1	26	36	.....	.....	4	15
Stormont, Dundas and Glengarry	135	57	4	15	16	1	1	2	9
Sudbury	8	31	.....	.....	.....	.....	.....	.....	1
Temiskaming	16	45	3	6	20	.....	.....	.....	2
Thunder Bay	45	63	.....	17	16	1	1	4	9
Victoria	79	48	.....	13	21	.....	1	5	15
Waterloo	216	98	3	30	35	2	1	7	28
Welland	104	98	3	24	31	.....	2	2	12
Wellington	178	97	1	19	37	.....	.....	2	13
Wentworth	276	166	2	43	51	5	5	11	27
York	1,191	1,136	25	119	451	16	29	36	129
Totals	6,316	4,010	79	832	1,449	50	74	157	607

throughout the Province of Ontario during the year ending 31st December, 1918.

and Letters of Administration issued where person follows:				Total amount of personalty devolving.	Total amount of realty to be administered under R.S.O. Cap. 119, s. 3.	Amount of moneys in Court in Surrogate matters, including interest, Con. Rule 769.	Amount earned for.		
From $5,000 to $10,000.	From $1,000 to $5,000.	From $400 to $1,000.	$400 and under.				Registrar's fees.	Judge's fees.	Fees to Crown.
				$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
3	29	28	40	187,852 31	189,824 24	.....	1,138 95	625 00	346 00
24	79	49	66	1,030,127 33	383,441 62	.....	3,519 95	1,669 75	865 60
27	103	23	33	651,817 00	402,405 62	.....	2,785 90	1,290 50	676 20
48	151	95	99	7,895,901 81	134,552 90	.....	6,844 65	8,666 70	4,504 60
9	33	7	22	211,638 31	150,889 71	.....	1,246 30	469 75	232 50
25	80	41	41	725,590 37	595,249 39	.....	2,870 79	1,353 25	717 90
25	93	42	63	898,157 88	713,343 21	10 05	3,482 21	1,833 25	888 60
20	60	29	37	586,241 91	284,424 00	.....	1,981 55	1,074 00	507 60
18	127	39	66	932,816 25	576,923 20	.....	3,289 80	1,658 25	924 40
17	38	10	20	393,141 27	205,488 00	.....	1,498 20	884 20	296 20
12	44	25	16	389,773 69	.....	.....	1,714 60	743 75	363 30
12	87	41	63	1,144,950 00	146,939 00	.....	2,904 50	1,697 30	950 00
34	139	39	60	1,189,192 54	133,621 95	.....	4,614 90	1,917 60	1,059 75
.....	7	7	8	18,983 00	34,531 00	.....	284 87	126 00	66 00
29	93	38	68	253,368 00	83,974 00	.....	2,002 18	1,397 50	788 40
17	96	40	55	744,188 05	547,025 00	301 47	2,856 28	1,417 75	762 90
21	58	20	14	460,220 61	236,680 11	.....	2,087 01	925 50	422 20
24	123	44	42	1,109,891 17	108,964 50	.....	3,888 80	1,785 80	949 00
9	23	12	10	243,163 13	203,150 00	.....	1,094 71	558 50	234 60
13	60	22	41	924,019 40	568,280 65	.....	2,105 20	1,354 50	683 40
5	9	1	.....	56,280 41	.....	.....	226 79	90 50	51 50
50	201	75	126	3,579,894 99	1,403,725 64	.....	5,847 45	5,001 65	2,701 25
6	13	13	16	65,751 49	7,265 00	.....	479 15	187 00	112 00
2	14	10	18	233,339 43	19,070 50	.....	562 75	307 00	172 50
47	22	17	16	473,441 34	266,688 96	465 46	2,000 44	1,019 50	441 20
29	101	41	56	1,097,513 11	512,489 07	.....	3,847 85	1,853 35	986 10
18	71	25	56	606,865 17	406,041 82	.....	2,577 55	1,145 25	563 70
35	82	43	44	1,109,961 25	582,861 04	599 76	4,026 69	1,906 15	991 70
2	23	18	11	114,367 83	46,193 00	.....	659,93	264 25	148 50
22	44	17	24	435,579 00	320,684 00	.....	1,824 13	782 50	423 80
27	103	28	40	1,224,520 71	523,616 00	.....	3,618 38	1,795 50	970 10
14	68	34	26	949,992 86	500,591 15	.....	2,559 24	1,516 00	720 20
10	48	17	20	306,223 35	164,436 00	.....	1,267 69	562 00	319 30
16	30	13	19	179,451 89	218,836 90	.....	1,504 25	615 50	280 50
.....	3	3	11	8,797 18	11,625 00	162 20	109 09	46 25	60 55
9	36	23	23	610,503 11	308,232 88	1,003 33	1,605 20	918 00	481 25
35	144	49	70	889,749 90	709,599 88	.....	4,480 90	1,908 50	1,000 55
26	87	36	34	4,149,128 42	102,085 00	.....	3,379 35	4,813 30	2,441 00
1	14	10	13	65,860 36	35,566 51	.....	339 17	147 75	91 30
3	23	15	21	63,111 66	76,836 09	.....	587 65	255 80	138 10
10	40	26	17	651,559 47	401,917 81	.....	1,242 44	638 00	299 70
20	52	21	13	422,679 33	386,131 72	474 92	1,979 90	808 75	13 00
44	120	46	69	1,638,517 62	785,890 39	.....	4,856 53	2,189 75	1,350 35
21	72	32	64	707,865 76	512,875 18	.....	2,622 20	1,298 75	693 60
38	135	40	48	8,970 12	5,136 05	.....	3,856 81	1,627 75	878 10
45	139	90	122	2,803,266 77	1,585,054 45	602 70	6,407 60	3,984 75	2,045 00
181	708	451	802	13,425,883 00	6,312,877 00	.....	29,896 12	20,181 92	9,931 80
1,103	3,925	1,845	2,643	55,870,109 56	21,906,035 14	3,619 89	144,566 60	87,314 27	44,545 70

APPENDIX F.—Return of fees and emoluments of the Judicial Officers throughout the officers payable by the Province, the County and the

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
ALGOMA:						
Sault Ste. Marie ..	Sheriff	**Wm. Carney .	2,938 20	1,000 00	3,938 20	2,762 00
	Surrogate Judge ...	Judge Stone	.....	*500 00	701 70	500 00
	Local Master	"	201 70	.....	.....	170 60
	Crown Attorney....	§G. W. Goodwin..	3,065 41	400 00	3,973 85	2,688 41
	Clerk of the Peace .	" ...	508 44	.....	.....	276 37
	Local Resistrar	¶T. J. Foster....	85 29	150 00	2,593 09	235 29
	District Court Clerk	"	618 85	600 00	.....	1,218 85
	Surrogate Registrar	"	1,138 95	.....	.....	1,138 95
BRANT:						
Brantford	Sheriff	J. W. Westbrook.	3,174 08	.....	3,174 08	2,232 92
	Surrogate Judge ...	Judge Hardy...†	Commuted	1,000 00	985 50	939 00
	Local Master	"	46 50	.....	.....	31 50
	Crown Attorney....	A. J. Wilkes, K.C.	1,442 83	.....	2,367 26	1,101 63
	Clerk of the Peace..	"	924 43	.....	.....	627 59
	Local Registrar	W. A. Hollinrake K.C.....	425 99	675 00	5,926 64	1,050 99
	County Court Clerk.	"	1,305 70	.....	.....	1,305 70
	Surrogate Registrar	"	3,519 95	.....	.....	3,519 95
BRUCE:						
Walkerton	Sheriff	D. M. Jermyn ...	2,735 62	.....	2,735 62	1,952 97
	Surrogate Judge ...	Judge Klein....	1,000 00	1,000 00	1,400 00	1,000 00
	Local Master	"	Commuted	400 00	.....	400 00
	Crown Attorney....	Thomas Dixon ..	561 25	.....	2,372 28	356 15
	Clerk of the Peace..	"	1,811 03	.....	.....	1,108 51
	Local Registrar....	R. E. Clapp	117 70	675 00	4,245 35	792 70
	County Court Clerk	"	666 75	.....	.....	316 01
	Surrogate Registrar	"	2,785 90	.....	.....	2,259 78
CARLETON:						
Ottawa...	Sheriff	G. C. Richardson	7,842 47	.....	7,842 47	6,469 52
	Surrogate Judge ...	‡Judge McTavish	1,267 95	.....	1,267 95	.....
	" "	Judge Gunn.....	1,000 00	.....	1,000 00	.....
	Local Master	J. Bishop, K.C. ..	2,208 00	.....	4,197 30	2,208 00
	Deputy Registrar ..	"	1,989 30	.....	.....	1,989 30
	Crown Attorney....	J. A. Ritchie	661 64	.....	1,493 96	438 84
	Clerk of the Peace..	"	832 32	.....	.....	519 95
	Deputy Clerk of the Crown	Horace Pratt ...	306 00	450 00	10,220 70	756 00
	County Court Clerk.	"	2,620 05	.....	.....	2,620 05
	Surrogate Registrar	"	6,844 65	.....	.....	6,844 65
DUFFERIN:						
Orangeville	Sheriff	H. Endacott....	1,472 73	.....	1,472 73	871 42
	Surrogate Judge ...	Judge Fisher....	469 75	.....	482 05	469 75
	Local Master	"	12 30	.....	.....	.....
	Crown Attorney....	J. L. Island	591 37	.....	1,082 04	428 95
	Clerk of the Peace..	"	490 67	.....	.....	167 70
	Local Registrar	J. A. V. Preston.	85 35	675 00	2,254 65	758 35
	County Court Clerk.	"	248 00	.....	.....	247 50
	Surrogate Registrar	"	1,246 30	.....	.....	1,221 20
ELGIN:						
St. Thomas	Sheriff.....	‡‡W. H. Elliott .	698 01	.....	698 01	155 78
	"	††A. McCrimmon	2,160 89	.....	2,160 89	2,093 44
	Surrogate Judge....	Judge Colter	1,000 00	.....	1,000 00	1,000 00
	Local Master.....	C. F. Maxwell ..	544 38	.....	544 38	379 10
	Crown Attorney....	A. McCrimmon .	2,025 54	.....	3,278 41	1,579 10
	Clerk of the Peace..	"	1,252 87	.....	.....	745 59
	Local Registrar	David McLaws..	106 50	675 00	4,378 79	659 00
	County Court Clerk.	"	726 50	.....	.....	702 30
	Surrogate Registrar	"	2,870 79	.....	2,867 49	2,867 49

* By R.S.O. Cap. 58, Sec. 17. † From 15th April. ‡ Died 22nd December, 1918.
**Appointed 3rd Jan., 1918. §Appointed permanently 19th Dec.
¶Appointed permanently 19th Dec. ‡‡Appointed by O.-in-C. 25th June. ††Acting.

Province of Ontario for the year ending 31st December, 1918, and of total earnings of such General Public, respectively, for the same period.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O. Cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	2,762 00	717 60	2,044 40	.....	2,044 40	2,909 72	.....	1,028 48	Algoma.
.....	685 10	.....	685 10	.....	685 10	500 00	.....	.....	
14 50	.....	.....	.....	.....	.....	.....	.....	201 70	
706 90	4,000 69	616 00	3,384 69	.....	3,384 69	3,465 41	.....	.....	
329 01	.....	.....	.....	.....	.....	508 44	.....	.....	
.....	2,593 09	219 30	2,373 79	.....	2,373 79	150 00	.....	85 29	
.....	.....	.....	.....	.....	.....	600 00	.....	618 85	
.....	.....	.....	.....	.....	.....	.....	.....	1,138 95	
730 37	2,963 29	579 74	2,383 55	.....	2,383 55	1,535 03	904 88	734 17	Brant.
.....	970 50	.....	970 50	.....	970 50	939 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	46 50	
336 60	2,441 40	798 55	1,642 85	.....	1,642 85	990 58	204 25	248 00	
375 58	.....	.....	.....	.....	.....	726 93	147 55	49 95	
50 00	5,926 64	1,325 60	4,601 04	700 52	3,900 52	675 00	.....	425 99	
.....	.....	.....	.....	.....	.....	.....	.....	1,305 70	
.....	.....	.....	.....	.....	.....	.....	.....	3,519 95	
317 44	2,270 41	1,209 82	1,060 59	.....	1,060 59	903 34	732 60	1,099 68	Bruce.
.....	1,400 00	.....	1,400 00	.....	1,400 00	.....	.....	1,000 00	
.....	.....	.....	.....	.....	.....	400 00	.....	.....	
22 24	2,105 64	8 60	2,097 04	9 70	2,087 34	518 92	35 33	7 00	
618 74	.....	.....	.....	.....	.....	1,655 00	150 13	5 90	
.....	4,276 75	724 20	3,552 55	176 28	3,376 27	675 00	.....	117 70	
363 30	.....	.....	.....	.....	.....	.....	.....	666 75	
544 96	.....	.....	.....	.....	.....	.....	.....	2,785 90	
1,366 28	7,835 80	2,910 56	4,925 24	.....	4,925 24	2,391 84	1,039 58	4,411 05	Carleton.
.....	1,267 95	.....	1,267 95	.....	1,267 95	.....	.....	1,267 95	
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
.....	4,197 30	1,077 00	3,120 30	.....	3,120 30	.....	.....	2,208 00	
.....	.....	.....	.....	.....	.....	.....	.....	1,989 30	
76 00	1,351 19	293 41	1,057 78	.....	1,057 78	626 64	.....	35 00	
316 40	.....	.....	.....	.....	.....	121 30	592 55	118 47	
.....	10,220 70	2,237 31	7,983 39	3,585 06	4,398 33	450 00	.....	306 00	
.....	.....	.....	.....	.....	.....	.....	.....	2,620 05	
.....	.....	.....	.....	.....	.....	.....	.....	6,844 65	
372 79	1,244 21	518 30	725 91	.....	725 91	733 65	557 83	181 25	Dufferin.
.....	469 75	.....	469 75	.....	469 75	.....	.....	469 75	
.....	.....	.....	.....	.....	.....	.....	.....	12 30	
89 20	993 68	35 72	957 96	.....	957 96	119 32	289 05	183 00	
307 83	.....	.....	.....	.....	.....	92 10	393 42	5 15	
.....	2,227 05	83 05	2,144 00	.....	2,144 00	675 00	.....	85 35	
.....	.....	.....	.....	.....	.....	.....	.....	248 00	
.....	.....	.....	.....	.....	.....	.....	.....	1,246 30	
.....	155 78	232 18	.....	.....	.....	324 10	165 50	208 41	Elgin.
604 26	2,697 70	678 82	2,018 88	.....	2,018 88	1,055 45	738 40	367 04	
.....	1,000 00	.....	1,000 00	.....	1,00 00	.....	.....	1,000 00	
41 16	420 26	200 00	220 26	.....	220 26	.....	.....	544 38	
465 70	3,215 95	667 09	2,548 86	59 77	2,489 09	1,412 30	189 74	423 50	
425 56	.....	.....	.....	.....	.....	165 25	1,087 62	.....	
115 50	4,398 53	629 80	3,768 73	284 37	3,484 36	675 00	.....	106 50	
29 44	.....	.....	.....	.....	.....	.....	.....	726 50	
24 80	.....	.....	.....	.....	.....	.....	.....	2,870 79	

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
ESSEX:						
Sandwich.	Sheriff	C. N. Anderson	5,978 70		5,978 70	4,333 41
	Surrogate Judge	Judge Dromgole	1,000 00		1,329 05	1,000 00
	Local Master	"	329 05			247 55
	Crown Attorney	J. H. Rodd	3,843 95		4,884 09	2,603 95
	Clerk of the Peace.	"	1,040 14			810 14
	Local Registrar	Henry Clay	801 28	675 00	6,781 89	1,476 28
	County Court Clerk	"	1,823 40			1,823 40
	SurrogateRegistrar	"	3,482 21			3,482 21
FRONTENAC						
Kingston.	Sheriff	Thomas Dawson	2,680 97		2,680 97	2,211 67
	Surrogate Judge	Judge Lavell	1,000 00		1,000 00	
	Local Master	J.B.Walkem,K.C.	248 06		248 06	129 76
	Crown Attorney	J. L. Whiting,K.C.	165 00		1,039 17	110 00
	Clerk of the Peace.	"	874 17			525 17
	Local Registrar	T. M. Asselstine	576 71	675 00	2,362 47	1,251 71
	County Court Clerk	"	1,110 76			1,110 76
GREY:	SurrogateRegistrar	Miss H. Fraser	1,981 55		1,981 55	1,981 55
Owen Sound	Sheriff	T. I. Thomson	2,397 89		2,397 89	1,716 91
	Surrogate Judge	Judge Widdifield	1,000 00		1,136 15	1,000 00
	Local Master	"	186 15			159 30
	Crown Attorney	T. H. Dyre	788 56		2,269 52	648 56
	Clerk of the Peace.	"	1,480 96			1,128 93
	Local Registrar	W. A. Bishop	123 65	750 00	4,912 40	4,912 40
	County Court Clerk	"	748 95			
	SurrogateRegistrar	"	3,289 80			
HALDIMAND						
Cayuga	Sheriff	M. McConnell	1,830 30		1,830 30	1,492 92
	Surrogate Judge	Judge Hopkins	884 20		896 09	884 20
	Local Master	"	11 80			11 80
	Crown Attorney	Harrison Arrell	309 22		1,543 47	256 20
	Clerk of the Peace.	"	1,234 25			905 95
	Local Registrar	J. C. Eccles	44 00	600 00	2,563 55	636 00
	County Court Clerk	"	421 35			387 20
	SurrogateRegistrar	"	1,498 20			1,494 95
HALTON:						
Milton	Sheriff	S. Webster	1,736 23		1,736 23	1,215 65
	Surrogate Judge	Judge Elliot	743 75		762 43	743 75
	Local Master	"	18 68			9 76
	Crown Attorney	W. I. Dick	392 45		1,606 17	149 45
	Clerk of the Peace.	"	1,213 72			783 66
	Local Registrar	W. J. McClenahan	43 60	600 00	2,583 85	643 60
	County Court Clerk	"	225 65			225 65
	SurrogateRegistrar	"	1,714 60			1,714 60
HASTINGS:						
Belleville.	Sheriff	M. B. Morrison	4,383 82		4,383 82	2,855 61
	Surrogate Judge	*Judge Wills	Commuted	985 00		
	Local Master	S. S. Lazier	Commuted	3,000 00		
	Deputy Registrar	"				
	Crown Attorney	Wm Carnew	1,901 05		3,204 00	1,190 30
	Clerk of the Peace.	"	1,302 95			882 10
	Deputy Clerk of the Crown	John Williams	127 46	450 00	4,727 09	577 46
	County Court Clerk	"	1,245 13			1,245 13
	SurrogateRegistrar	"	2,904 50			2,904 50

*Commutation rescinded by O.-in-C., 2nd October, 1918.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O. Cap. 17.	Net Income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
804 99	5,138 40	1,384 38	3,754 02	.....	3,754 02	2,293 38	1,241 81	2,443 51	Essex.
.....	1,370 45	.....	1,370 45	.....	1,370 45	.....	.....	1,000 00	
122 90	.....	.....	.....	.....	.....	.....	.....	329 05	
585 70	4,252 24	1,408 25	2,843 99	118 79	2,725 20	1,924 95	674 00	1,245 00	
252 45	.....	.....	.....	.....	.....	121 85	829 50	88 79	
.....	6,781 89	1,419 20	5,362 69	1,226 42	4,136 27	675 00	.....	801 28	
.....	.....	.....	.....	.....	.....	.....	.....	1,823 40	
.....	.....	.....	.....	.....	.....	.....	.....	3,482 21	
492 23	2,703 90	434 00	2,269 90	.....	2,269 90	963 95	689 75	1,027 27	Frontenac.
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
.....	129 76	.....	129 76	.....	129 76	.....	.....	248 06	
92 00	1,074 92	100 00	974 92	.....	974 92	165 00	.....	.....	
347 75	.....	.....	.....	.....	.....	104 96	769 21	.....	
.....	2,362 47	173 70	2,188 77	.....	2,188 77	675 00	.....	576 71	
.....	.....	.....	.....	.....	.....	.....	.....	1,110 76	
.....	1,981 55	200 00	1,781 55	.....	1,781 55	.....	.....	1,981 55	
483 09	2,200 00	1,159 33	1,040 67	.....	1,040 67	688 09	903 06	806 74	Grey.
.....	1,228 90	.....	1,228 90	.....	1,228 90	.....	.....	1,000 00	
69 60	.....	.....	.....	.....	.....	.....	.....	186 15	
131 05	2,253 99	536 89	1,717 10	.....	1,717 10	224 35	316 30	247 91	
345 45	.....	.....	.....	.....	.....	80 30	1,308 44	92 22	
.....	4,912 40	762 20	4,150 20	475 10	3,675 10	750 00	.....	123 65	
.....	.....	.....	.....	.....	.....	.....	.....	748 95	
.....	.....	.....	.....	.....	.....	.....	.....	3,289 80	
364 81	1,857 73	340 10	1,517 63	.....	1,517 63	595 67	694 73	539 90	Haldimand.
.....	906 85	1 00	905 85	.....	905 85	.....	.....	884 20	
10 85	.....	.....	.....	.....	.....	.....	.....	11 80	
49 00	1,535 70	440 00	1,095 70	.....	1,095 70	114 21	141 01	54 00	
324 55	.....	.....	.....	.....	.....	91 55	1,120 90	22 70	
.....	2,583 95	193 00	2,390 95	.....	2,390 95	600 00	.....	44 00	
62 00	.....	.....	.....	.....	.....	.....	.....	421 35	
3 60	.....	.....	.....	.....	.....	.....	.....	1,498 20	
461 50	1,677 15	858 74	818 41	.....	818 41	849 82	490 59	395 82	Halton.
.....	775 21	.....	775 21	.....	775 21	.....	.....	743 75	
21 70	.....	.....	.....	.....	.....	.....	.....	18 68	
346 25	1,841 03	164 20	1,676 83	.....	1,676 83	375 45	.....	17 00	
561 67	.....	.....	.....	.....	.....	67 90	1,125 97	19 85	
.....	2,583 85	38 90	2,544 95	4 50	2,540 45	600 00	.....	43 60	
.....	.....	.....	.....	.....	.....	.....	.....	225 65	
.....	.....	.....	.....	.....	.....	.....	.....	1,714 60	
856 78	3,712 39	1,312 00	2,400 39	.....	2,400 39	2,293 94	1,005 75	1,084 13	Hastings.
.....	988 75	.....	988 75	.....	988 75	904 00	.....	84 75	
.....	3,000 00	704 00	2,296 00	.....	2,296 00	3,000 00	.....	.....	
400 08	2,824 93	512 32	2,312 61	31 26	2,281 35	1,657 52	17 33	226 20	
352 45	.....	.....	.....	.....	.....	252 95	1,050 00	.....	
.....	4,727 09	799 00	3,928 09	364 05	3,564 04	450 00	.....	127 46	
.....	.....	.....	.....	.....	.....	.....	.....	1,245 13	
.....	.....	.....	.....	.....	.....	.....	.....	2,904 50	

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
HURON:						
Goderich..	Sheriff	R. G. Reynolds	2,846 85	.....	2,846 85	2,702 99
	Surrogate Judge ..	Judge Dickson ..	Commuted	1,000 00	1,050 40	1,000 00
	Local Master	"	50 40	.....	.....	34 40
	Crown Attorney ..	C. Seager.....	1,003 28	.....	2,421 29	841 73
	Clerk of the Peace..	"	1,418 01	.....	.....	1,165 75
	Local Registrar...	D. McDonald....	20 00	750 00	5,729 35	770 00
	County Court Clerk.	"	344 45	.....	.....	344 45
	SurrogateRegistrar	"	4,614 90	.....	.....	4,614 90
KENORA:						
Kenora...	Sheriff	J. W. Humble ...	1,137 30	1,000 00	2,137 30	1,430 02
	Surrogate Judge ..	Judge Chapple ..	.....	*500 00	712 58	500 00
	Local Master	" ..	212 58	.....	.....	212 58
	Crown Attorney...	J.F.MacGillivray	209 85	.....	698 70	160 85
	Clerk of the Peace.	†K.C."	238 85	250 00	.....	359 19
	Local Registrar...	C. W. Chadwick.	6 90	700 00	1,254 60	706 90
	District Court Cl'k.	" .	262 83	.....	.....	262 83
	SurrogateRegistrar	" .	284 87	.....	.....	284 87
KENT:						
Chatham..	Sheriff	J. R. Gemmill..	2,703 67	.....	2,703 67	2,243 48
	Surrogate Judge...	JudgeStamworth	1,000 00	.....	1,000 00	.....
	Local Master.....	Thos. Scullard..	5 60	.....	5 60	5 60
	Crown Attorney...	H. D. Smith	1,251 37	.....	2,398 67	1,039 92
	Clerk of the Peace.	"	1,147 30	.....	.....	1,084 90
	Local Registrar ..	James Holmes ..	119 45	675 00	3,472 88	798 95
	County Court Clerk.	" ..	676 25	.....	.....	676 25
	Surrogate Regist'r.	" ..	2,002 18	.....	.....	2,002 18
LAMBTON:						
Sarnia....	Sheriff	**A. J. Johnston.	2,992 37	.....	2,992 37	2,102 14
	Surrogate Judge...	Judge MacWatt .	Commuted	1,000 00	1,359 60	1,000 00
	Local Master	" ..	359 60	.....	.....	290 20
	Crown Attorney...	F. W. Willson...	1,610 04	.....	2,992 13	1,337 94
	Clerk of the Peace.	"	1,382 09	.....	.....	1,290 84
	Local Registrar...	Alex Saunders..	142 00	675 00	4,233 08	817 00
	County Court Clerk.	" ..	559 80	.....	.....	559 80
	Surrogate Regist'r.	" ..	2,856 28	.....	.....	2,856 28
LANARK:						
Perth.....	Sheriff	D. G. MacMartin.	1,846 98	.....	1,846 98	1,317 34
	Surrogate Judge...	‡Judge Scott....	Commuted	1,000 00	.....	1,000 00
	Local Master.....	Judge Senkler...	48 43	.....	48 43	18 10
	Crown Attorney...	¶J. M. Balderson,	1,035 47	.....	1,749 78	782 05
	Clerk of the Peace	" K.C.	714 31	.....	.....	519 32
	Local Registrar . .	⁋J. S. L. McNeely	64 80	675 00	3,245 98	731 55
	County Court Clerk.	" ..	419 17	.....	.....	419 17
LEEDS AND	Surrogate Regist'r.	" ..	2,087 01	.....	.....	2,087 01
GRENVILLE:						
Brockville.	Sheriff	J. A. McCammon	2,875 23	.....	2,875 23	2,188 13
	Surrogate Judge...	Judge McDonald.	Commuted	960 00	.....	.....
	Local Masters...	Judge Dowsley..	4 40	.....	4 40	4 40
		Judge Reynolds.	153 30	.....	153 30	72 50
	Crown Attorney...	M. M. Brown....	930 24	.....	2,258 52	691 54
	Clerk of the Peace.	"	1,328 28	.....	.....	915 22
	Local Registrar ...	A. E. Baker	273 30	750 00	5,016 00	1,023 30
	County Court Clerk.	"	1,103 90	.....	.....	1,103 90
	Surrogate Regist'r.	"	3,888 80	.....	.....	3,888 80

* By R.S.O. Cap. 58, Sec. 17. ⁋ Appointed by O.-in-C. 27th March, 1918.
† J. S. Allan appointed pro tem. by O.-in-C., 10th December, assumed office 1st January, 1919.
** Appointed by O.-in-C. 10th May, 1918. ‡ By O.-in-C. 21st February from 1st March, 1918.
¶ Appointed O.-in-C. 1st November.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O., Cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
52 82	2,755 81	740 05	2,015 76	.....	2,015 76	1,036 82	1,202 94	607 09	Huron.
.....	1,034 40	.....	1,034 40	.....	1,034 40	1,000 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	50 40	
236 00	2,275 48	.....	2,275 48	27 54	2,247 94	356 73	517 55	129 00	
32 00	.....	.....	.....	.....	.....	299 61	1,100 00	18 40	
.....	5,729 35	993 80	4,735 55	767 77	3,967 78	750 00	.....	20 00	
.....	.....	.....	.....	.....	.....	.....	.....	344 45	
.....	.....	.....	.....	.....	.....	.....	.....	4,614 90	
595 15	2,025 17	637 44	1,387 73	.....	1,387 73	1,980 63	.....	156 67	Kenora.
.....	712 58	15 00	697 58	.....	697 58	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	212 58	
70 00	726 49	.....	726 49	.....	726 49	209 85	.....	.....	
136 45	.....	.....	.....	.....	.....	480 19	.....	8 66	
.....	1,271 20	400 00	871 20	.....	871 20	700 00	.....	6 90	
16 60	.....	.....	.....	.....	.....	.....	.....	262 83	
.....	.....	.....	.....	.....	.....	.....	.....	284 87	
748 96	2,992 44	745 70	2,246 74	.....	2,246 74	989 80	911 55	802 32	Kent.
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
.....	5 60	.....	5 60	.....	5 60	.....	.....	5 60	
598 32	2,811 24	900 00	1,911 24	.....	1,911 24	743 25	253 22	254 90	
88 10	.....	.....	.....	.....	.....	147 30	1,000 00	.....	
.....	3,477 38	880 00	2,597 38	9 74	2,587 64	675 00	.....	119 45	
.....	.....	.....	.....	.....	.....	.....	.....	676 25	
.....	.....	.....	.....	.....	.....	.....	.....	2,002 18	
677 99	2,780 13	810 22	1,969 91	.....	1,969 91	1,414 75	501 45	1,076 10	Lambton.
....	1,290 20	20 00	1,270 20	.....	1,270 20	1,000 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	359 60	
368 00	3,125 98	562 15	2,563 83	62 76	2,501 07	638 50	327 49	644 05	
129 70	.....	.....	.....	.....	.....	164 85	1,200 00	17 24	
.....	4,233 08	745 00	3,488 08	147 61	3,340 47	675 00	.....	142 00	
.....	.....	.....	.....	.....	.....	.....	.....	559 80	
.....	.....	.....	.....	.....	.....	.....	.....	2,856 28	
385 66	1,703 00	835 07	867 93	.....	867 93	745 90	687 18	413 90	Lanark.
.....	1,000 00	.....	1,000 00	.....	1,000 00	1,000 00	.....	.....	
19 70	37 80	.....	37 80	.....	37 80	.....	.....	48 43	
153 28	1,648 49	108 96	1,539 53	.....	1,539 53	537 60	382 87	115 00	
193 84	.....	.....	.....	.....	.....	58 85	617 06	38 40	
.....	3,237 73	213 00	3,024 73	54 95	2,969 78	675 00	.....	64 80	
.....	.....	.....	.....	.....	.....	.....	.....	419 17	
.....	.....	.....	.....	.....	.....	.....	.....	2,087 01	
594 30	2,782 43	1,093 35	1,689 08	.....	1,689 08	1,402 05	812 25	660 93	Leeds and Grenville.
.....	960 00	.....	.....	.....	960 00	960 00	.....	.....	
.....	4 40	.....	4 40	.....	4 40	.....	.....	4 40	
36 44	108 94	.....	108 94	.....	108 94	.....	.....	153 30	
269 61	2,236 17	402 10	1,834 07	.....	1,834 07	574 24	235 00	121 00	
359 80	.....	.....	.....	.....	.....	447 00	858 78	22 50	
.....	6,035 10	952 35	5,082 75	974 47	4,108 28	750 00	.....	273 30	
.....	.....	.....	.....	.....	.....	.....	.....	1,103 90	
19 10	.....	.....	.....	.....	.....	.....	.....	3,888 80	

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
LENNOX & ADDINGTON: Napanee.	Sheriff	G. D. Hawley	1,477 39	.....	1,477 39	1,030 34
	Surrogate Judge	Judge Madden	558 50	.....	558 50	.....
	Local Master	S. S. Lazier	229 90	.....	229 90	209 80
	Crown Attorney	U. M. Wilson	578 85	.....	1,647 55	455 89
	Clerk of the Peace.	"	1,068 70	.....	.....	497 66
	Local Registrar	W. P. Deroche	110 20	600 00	2,123 81	710 20
	County Court Clerk.	"	318 90	.....	.....	318 90
	Surrogate Regist'r.	"	1,094 71	.....	.....	1,094 71
LINCOLN: St. Catharines.	Sheriff	Henry O'Loughlin	3,624 07	.....	3,624 07	2,986 51
	Surrogate Judge	Judge Campbell	Commuted	900 00	1,009 60	900 00
	Local Master	"	109 60	.....	.....	39 40
	Crown Attorney	M. Brennan	922 50	.....	2,420 55	680 50
	Clerk of the Peace.	"	1,498 05	.....	.....	1,005 87
	Local Registrar	Johnson Clench	343 25	675 00	4,021 60	964 85
	County Court Clerk	"	898 15	.....	.....	810 35
	Surrogate Regist'r.	"	2,105 20	.....	.....	2,105 20
MANITOULIN: Gore Bay.	Sheriff	J. Haddow Fell	2,037 15	950 00	2,987 15	1,889 15
	Surrogate Judge	Judge Hewson	.....	*500 00	507 00	500 00
	Local Master	"	7 00	.....	.....	7 00
	Crown Attorney	J. H. Craig, pro tem	65 00	250 00	615 89	294 00
	Clerk of the Peace.	"	300 89	.....	.....	181 70
	Local Registrar	C. C. Platt	.....	.....	1,151 99	.....
	District Court Clerk	"	75 20	850 00	.....	925 20
	Surrogate Regist'r.	"	226 79	.....	.....	226 79
MIDDLESEX: London.	Sheriff	D. M. Cameron	5,893 56	.....	5,893 56	4,423 19
	Surrogate Judges	Judge Macbeth	1,300 00	.....	1,300 00	.....
		Judge Judd	1,000 00	.....	1,000 00	.....
	Local Master	H. S. Blackburn	523 54	.....	2,218 74	454 82
	Deputy Registrar	"	1,695 20	.....	.....	1,557 34
	Crown Attorney	J. B. McKillop	1,942 12	.....	2,518 37	1,156 21
	Clerk of the Peace.	"	1,576 25	.....	.....	1,026 06
	Deputy Clerk of the Crown	Edmund Weld	162 00	500 00	7,763 65	662 00
	County Court Clerk.	"	1,254 20	.....	.....	1,160 20
	SurrogateRegistrar	"	5,847 45	.....	.....	5,847 45
MUSKOKA: Bracebridge.	Sheriff	D. E. Bastedo	1,610 92	750 00	2,360 92	1,849 77
	Surrogate Judge	Judge Mahaffy	.....	*500 00	500 00	500 00
	Local Master	"	.....	.....	.....	.....
	Crown Attorney	Thomas Johnson	345 59	250 00	1,030 19	500 35
	Clerk of the Peace.	"	434 60	.....	.....	189 00
	Local Registrar	†Isaac Huber	16 00	.....	1,223 65	16 00
	District Court Cl'k.	"	128 50	600 00	.....	728 50
	SurrogateRegistrar	"	479 15	.....	.....	479 15
NIPISSING: North Bay	Sheriff	H. C. Varin	1,166 38	800 00	1,966 38	1,669 08
	Surrogate Judge	Judge Valin	.....	*500 00	500 90	500 00
	Local Master	"	10 90	.....	.....	10 90
	Crown Attorney	T. E. McKee	429 46	250 00	976 91	631 95
	Clerk of the Peace.	"	297 45	.....	.....	243 50
	Local Registrar	T. J. Bourke	92 10	150 00	1,924 40	242 10
	District Court Cl'k	"	669 55	450 00	.....	1,119 55
	SurrogateRegistrar	"	562 75	.....	.....	562 75

* By R.S.O. Cap. 58, Sec. 17. †Died 20th July, 1918; Thomas Johnson acting.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O., Cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
381 90	1,412 24	322 49	1,089 75	.....	1,089 75	695 45	574 15	207 79	Lennox and Addington.
.....	558 50	.....	558 50	.....	558 50	.....	.....	558 50	
30 95	240 75	51 00	189 75	.....	189 75	.....	.....	229 90	
339 93	1,809 73	471 93	1,337 80	.....	1,337 80	293 00	103 00	182 85	
516 25	.....	.....	.....	.....	.....	30 30	996 34	42 06	
.....	2,123 81	212 95	1,910 86	.....	1,910 86	600 00	.....	110 20	
.....	.....	.....	.....	.....	.....	.....	.....	318 90	
.....	.....	.....	.....	.....	.....	.....	.....	1,094 71	
511 26	3,497 77	829 46	2,668 31	.....	2,668 31	972 01	1,079 48	1,572 58	Lincoln.
.....	985 40	.....	985 40	.....	985 40	900 00	.....	.....	
46 00	.....	.....	.....	.....	.....	.....	.....	109 60	
282 00	2,536 37	542 50	1,993 87	.....	1,993 87	787 00	.....	135 50	
568 00	.....	.....	.....	.....	.....	170 35	1,207 70	120 00	
.....	3,903 90	522 25	3,381 65	126 33	3,255 32	675 00	.....	343 25	
23 50	.....	.....	.....	.....	.....	.....	.....	898 15	
.....	.....	.....	.....	.....	.....	.....	.....	2,105 20	
80 50	1,969 65	175 25	1,794 40	.....	1,794 40	1,906 81	.....	130 34	Manitoulin.
.....	507 00	.....	507 00	.....	507 00	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	7 00	
10 00	571 83	.....	571 83	.....	571 83	315 00	.....	.....	
86 13	.....	.....	.....	.....	.....	300 89	.....	.....	
.....	1,151 99	.....	1,151 99	.....	1,151 99	.....	.....	.....	
.....	.....	.....	.....	.....	.....	850 00	.....	75 20	
.....	.....	.....	.....	.....	.....	.....	.....	226 79	
1,336 27	5,759 46	2,187 30	3,572 16	.....	3,572 16	2,427 18	2,036 89	1,429 49	Middlesex.
.....	1,300 00	.....	1,300 00	.....	1,300 00	.....	.....	1,300 00	
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
48 16	2,198 18	374 00	1,824 18	.....	1,824 18	.....	.....	523 54	
137 86	.....	.....	.....	.....	.....	.....	.....	1,695 20	
582 60	3,420 16	1,050 00	2,370 16	37 01	2,333 15	1,733 76	162 36	46 00	
655 29	.....	.....	.....	.....	.....	191 55	1,324 10	60 60	
.....	7,876 95	2,856 00	5,020 95	918 85	4,102 10	500 00	.....	162 00	
66 10	.....	.....	.....	.....	.....	.....	.....	1,254 20	
141 20	.....	.....	.....	.....	.....	.....	.....	5,847 45	
306 49	2,156 26	1,206 00	950 26	.....	950 26	2,217 03	.....	143 89	Muskoka.
.....	500 00	.....	500 00	.....	500 00	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	
118 05	1,003 74	11 69	992 05	.....	992 05	595 59	.....	.....	
196 34	.....	.....	.....	.....	.....	398 95	.....	35 65	
.....	1,223 65	13 00	1,210 65	.....	1,210 65	.....	.....	16 00	
.....	.....	.....	.....	.....	.....	600 00	.....	128 50	
.....	.....	.....	.....	.....	.....	.....	.....	479 15	
110 60	1,779 68	953 95	825 73	.....	825 73	1,500 24	.....	466 14	Nipissing.
.....	510 90	.....	510 90	.....	510 90	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	10 90	
181 63	1,207 23	40 18	1,167 05	.....	1,167 05	679 46	.....	.....	
150 15	.....	.....	.....	.....	.....	297 45	.....	.....	
.....	1,924 40	94 27	1,830 13	.....	1,830 13	150 00	.....	92 10	
.....	.....	.....	.....	.....	.....	450 00	.....	669 55	
.....	.....	.....	.....	.....	.....	.....	.....	562 75	

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
NORFOLK:						
Simcoe ...	Sheriff	§F. S. Snider....	219 33	.....	219 33	205 53
		T. R. Slaght, K.C.	661 26	.....	661 26	661 26
		†Walter Tisdale.	865 17	.....	865 17	314 14
	Surrogate Judge ..	Judge Boles.....	1,000 00	.....	1,013 10	1,000 00
	Local Master.....	"	13 10	.....	.....	13 10
	Crown Attorney...	T. R. Slaght, K.C.	988 19	.....	2,513 54	821 69
	Clerk of the Peace.	"	1,525 35	.....	.....	1,419 40
	Local Registrar ..	C. C. Rapelje....	197 70	675 00	3,334 79	872 70
	County Court Cl'k.	"	461 65	.....	.....	461 65
	SurrogateRegistrar	"	2,000 44	.....	.....	2,000 44
NORTHUM-BERLAND AND DURHAM:	Sheriff	D. J. Nesbitt.....	2,900 96	.....	2,900 96	2,060 00
	Surrogate Judge...	Judge Ward.....	Commuted	1,000 00	.....	.....
	Local Master	Judge Roger.....	108 80	.....	108 80	59 90
Cobourg ..	Crown Attorney...	W. F. Kerr.....	829 34	.....	1,656 68	474 54
	Clerk of the Peace.	"	827 34	.....	.....	477 40
	Local Registrar ..	John T. Field ...	97 20	750 00	5,121 75	847 20
	County Court Clerk	"	426 70	.....	.....	426 70
	SurrogateRegistrar	"	3,847 85	.....	.....	3,847 85
ONTARIO:						
Whitby ..	Sheriff	J. F. Paxton	2,252 81	.....	2,252 81	1,713 27
	Surrogate Judge...	G. Y. Smith.....	1,000 00	.....	1,187 50	1,000 00
	Local Master	"	187 50	.....	.....	132 50
	Crown Attorney...	J.E.Farewell, KC	655 60	.....	1,657 73	547 80
	Clerk of the Peace.	"	1,002 13	.....	.....	714 97
	Local Registrar...	Horace Bascom..	55 25	675 00	3,768 55	730 25
	County Court Cl'k.	"	460 75	.....	.....	460 75
	SurrogateRegistrar	"	2,577 55	.....	.....	2,577 55
OXFORD:						
Woodstock	Sheriff	Wm. McGhee....	2,247 05	.....	2,247 05	1,402 65
	Surrogate Judge ..	Judge Wallace..	Commuted	1,000 00	.....	.....
	Local Master	W. T. McMullen.	38 30	.....	38 30	26 30
	Crown Attorney...	R. N. Ball	599 97	.....	1,798 64	507 97
	Clerk of the Peace.	"	1,198 67	.....	.....	742 13
	Clerk of the Peace	‡Peter McDonald	141 85	225 00	5,035 88	366 85
	County Court Clerk	"	642 34	.....	.....	642 34
PARRY SOUND:	SurrogateRegistrar	"	4,026 69	.....	.....	4,026 69
Parry Sound	Sheriff	Sam'l Armstrong	2,184 44	750 00	2,934 44	2,339 72
	Surrogate Judge ..	Judge Powell....	.....	*500 00	501 30	500 00
	Local Master.....	"	1 30	.....	.....	1 30
	Crown Attorney...	W. L. Haight. ..	790 00	250 00	1,405 16	890 00
	Clerk of the Peace.	"	365 16	.....	.....	176 78
	Local Registrar...	Frederick Tasker	154 30	600 00	1,736 43	754 30
	County Court Cl'k.	"	322 20	.....	.....	322 20
	SurrogateRegistrar	"	659 93	.....	.....	659 93
PEEL:		[son				
Brampton.	Sheriff	Nathan Hender-	1,955 32	.....	1,955 32	1,364 09
	Surrogate Judge...	Judge Justin...	782 50	.....	823 90	782 50
	Local Master	" ...	41 40	.....	.....	.....
	Crown Attorney...	Walker S.Morphy	480 53	.....	1,149 17	407 53
	Clerk of the Peace.	"	668 64	.....	.....	551 39
	Local Registrar...	J. B. Dixon.....	195 10	600 00	2,875 68	684 12
	County Court Cl'k.	"	256 45	.....	.....	256 45
	SurrogateRegistrar	"	1,824 13	.....	.....	1,824 13

*By R.S.O. Cap. 58, Sec. 17. § Died 10th February. † Appointed by O.-in-C. 9th May, 1918.
‡ Appointed by O.-in-C. 16th July, 1918, to succeed James Canfield, who died 28th February.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts,	Amount paid to Province under R.S.O. Cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
383 84	589 37	148 10	441 27	.....	441 27	68 39	129 79	21 15	Norfolk.
.....	661 26	191 76	469 50	.....	469 50	285 80	215 55	159 91	
.....	314 14	362 52	.....	.....	.....	312 50	358 70	193 97	
.....	1,013 10	.....	1,013 10	.....	1,013 10	.....	.....	1,000 00	
.....	.....	.....	.....	.....	.....	.....	.....	13 10	
221 00	2,936 90	643 21	2,293 69	29 36	2,264 33	431 00	484 95	72 24	
474 81	.....	.....	.....	.....	.....	149 75	1,337 50	37 90	
.....	3,334 79	148 90	3,185 89	87 17	3,098 72	675 00	.....	197 70	
.....	.....	.....	.....	.....	.....	.....	.....	461 65	
.....	.....	.....	.....	.....	.....	.....	.....	2,050 44	
736 97	2,794 97	1,249 92	1,545 05	.....	1,545 05	1,067 55	1,099 00	734 41	Northumberland and Durham.
.....	1,000 00	.....	1,000 00	.....	1,000 00	1,000 00	.....	.....	
.....	59 90	.....	59 90	.....	59 90	.....	.....	108 80	
290 45	1,574 58	407 86	1,166 72	.....	1,166 72	509 68	269 30	50 36	
332 19	.....	.....	.....	.....	.....	141 95	673 24	12 15	
.....	5,121 75	671 20	4,450 55	625 28	3,825 27	750 00	.....	97 20	
.....	.....	.....	.....	.....	.....	.....	.....	426 70	
.....	.....	.....	.....	.....	.....	.....	.....	3,847 85	
377 93	2,091 20	636 08	1,455 12	.....	1,455 12	691 75	694 89	866 17	Ontario.
.....	1,132 50	.....	1,132 50	.....	1,132 50	.....	.....	1,000 00	
.....	.....	.....	.....	.....	.....	.....	.....	187 50	
154 00	1,828 28	432 40	1,395 88	.....	1,395 88	489 40	.....	166 20	
411 51	.....	.....	.....	.....	.....	86 85	905 98	9 30	
.....	3,768 55	561 00	3,207 55	91 51	3,116 04	675 00	.....	55 25	
.....	.....	.....	.....	.....	.....	.....	.....	460 75	
.....	.....	.....	.....	.....	.....	.....	.....	2,577 55	
647 78	2,050 43	1,192 71	857 72	.....	857 72	868 05	863 48	515 52	Oxford.
.....	1,000 00	.....	1,000 00	.....	1,000 00	1,000 00	.....	.....	
3 35	29 65	.....	29 65	.....	29 65	.....	.....	38 30	
31 35	1,713 86	.....	1,713 86	.....	1,713 86	131 22	468 75	.....	
432 41	.....	.....	.....	.....	.....	152 75	1,037 38	8 54	
97 33	5,560 14	1,112 85	4,447 29	623 94	3,823 35	225 00	.....	141 85	
91 67	.....	.....	.....	.....	.....	.....	.....	642 34	
335 26	.....	.....	.....	.....	.....	.....	.....	4,026 69	
676 31	3,016 03	1,665 41	1,350 62	.....	1,350 62	2,679 11	.....	255 33	Parry Sound.
.....	501 30	.....	501 30	.....	501 30	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	1 30	
203 49	1,451 96	167 00	1,284 96	.....	1,284 96	771 75	.....	268 25	
181 69	.....	.....	.....	.....	.....	332 31	.....	32 85	
.....	1,736 43	61 25	1,675 18	.....	1,675 18	600 00	.....	154 30	
.....	.....	.....	.....	.....	.....	.....	.....	322 20	
.....	.....	.....	.....	.....	.....	.....	.....	659 93	
393 66	1,757 75	746 85	1,010 90	.....	1,010 90	794 14	687 24	473 94	Peel.
.....	784 40	.....	784 40	.....	784 40	.....	.....	782 50	
1 90	.....	.....	.....	.....	.....	.....	.....	41 40	
87 00	1,178 16	158 55	1,019 61	.....	1,019 61	227 30	126 55	126 68	
132 24	.....	.....	.....	.....	.....	109 65	522 87	36 12	
.....	2,764 70	183 45	2,581 25	8 13	2,573 12	600 00	.....	195 10	
.....	.....	.....	.....	.....	.....	.....	.....	256 45	
.....	.....	.....	.....	.....	.....	.....	.....	1,824 13	

APPENDIX F.—Report of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
PERTH: Stratford.	Sheriff	Thomas Magwood	2,889 60	.....	2,889 60	2,192 84
	Surrogate Judge	Judge Barron	Commuted	873 00	1,723 00	.....
	Local Master	"	Commuted	850 00	.....	.....
	Crown Attorney	G. G. McPherson, K.C.	1,520 75	.....	3,194 08	1,252 15
	Clerk of the Peace.	"	1,673 33	.....	.....	1,105 70
	Local Registrar	E. Sydney Smith, K.C.	109 50	675 00	5,366 48	741 74
	County Court Clerk	"	963 60	.....	.....	804 49
	Surrogate Registrar	"	3,618 38	.....	.....	3,175 70
PETERBOROUGH: Peterboro	Sheriff	J. A. Hall	1,928 77	.....	1,928 77	1,235 92
	Surrogate Judge	Judge Huycke	1,000 00	.....	1,404 90	1,000 00
	Local Master	"	404 90	.....	.....	182 20
	Crown Attorney	G. W. Hatton	1,080 05	.....	2,207 11	855 85
	Clerk of the Peace.	"	1,127 06	.....	.....	526 42
	Local Registrar	G. J. Sherry	381 20	675 00	4,542 54	840 00
	County Court Clerk	"	927 10	.....	.....	722 80
	Surrogate Registrar	"	2,559 24	.....	.....	2,552 14
PRESCOTT & RUSSELL: L'Orignal	Sheriff	Albert Hagar	1,647 16	.....	1,647 16	1,070 46
	Surrogate Judge	Judge Constentineau	562 00	.....	606 40	562 00
	Local Master	"	44 40	.....	.....	44 40
	Crown Attorney	†Louis Coté	No returns	.....	.....	.....
	Clerk of the Peace.	"	.....	.....	.....	.....
	Local Registrar	Joseph Bélanger	40 30	675 00	2,318 64	715 30
	County Court Clerk	"	335 65	.....	.....	328 35
	Surrogate Registrar	"	1,267 69	.....	.....	1,242 04
PRINCE EDWARD: Picton	Sheriff	D. J. Barker	1,517 90	.....	1,517 90	1,290 88
	Surrogate Judge	Judge Wills, act'g	615 80	.....	636 60	615 80
	Local Masters	‡ "	20 80	.....	.....	.....
		Judge Deroche	.....	.....	.....	.....
	Crown Attorney	R. H. Hubbs	76 08	.....	842 38	54 88
	Clerk of the Peace.	"	766 30	.....	.....	384 80
	Local Registrar	Nehemiah Gilbert	107 70	600 00	2,553 90	707 70
	County Court Clerk	"	341 95	.....	.....	341 95
RAINY RIVER: Fort Frances	Surrogate Registrar	"	1,504 25	.....	.....	1,504 25
	Sheriff	W. A. Baker	1,721 78	750 00	2,471 78	1,870 58
	Surrogate Judge	Judge McLennan	.....	*500 00	583 90	500 00
	Local Master	"	83 90	.....	.....	.....
	Crown Attorney	N. L. Croome	211 00	250 00	754 50	379 00
	Clerk of the Peace.	"	293 50	.....	.....	141 70
	Local Registrar	Wm. H. Elliott	20 00	450 00	869 04	470 00
	District Court Clerk	"	289 95	.....	.....	289 95
RENFREW: Pembroke	Surrogate Registrar	"	109 09	.....	.....	109 09
	Sheriff	Alex. Morris	2,586 04	.....	2,586 04	2,163 54
	Surrogate Judge	Judge McNamara	918 00	.....	918 00	918 00
	Local Master	"	.....	.....	.....	.....
	Crown Attorney	J. H. Burritt, K.C.	269 96	.....	1,013 19	184 96
	Clerk of the Peace.	"	743 23	.....	.....	449 86
	Local Registrar	H. W. Perrett	57 75	600 00	2,648 35	657 75
	County Court Clerk	"	385 40	.....	.....	385 40
	Surrogate Registrar	"	1,605 20	.....	.....	1,605 20

† Appointed by O.-in-C. 17th February, 1919, in the room and stead of John Maxwell, dismissed from office. ‡ Judge Wills and Judge Deroche Local Masters pro tem by O.-in-C. 17th February, 1918. * By R.S.O. Cap. 58, Sec. 27.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O. Cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
582 73	2,776 57	1,148 33	1,628 24	.....	1,628 24	1,115 94	658 66	1,115 00	Perth.
.....	1,723 00	.....	1,721 50	.....	1,721 50	873 00	.....	.....	
.....	.....	1 50	.....	.....	.....	850 00	.....	.....	
250 50	3,354 02	403 00	2,951 02	140 20	2,810 82	752 75	208 00	560 00	
745 67	.....	.....	.....	.....	.....	141 20	1,379 30	152 83	
107 98	5,508 23	1,131 95	4,376 28	588 14	3,788 14	675 00	.....	109 50	
337 40	.....	.....	.....	.....	.....	.....	.....	963 60	
340 92	.....	.....	.....	.....	.....	.....	.....	3,618 38	
455 90	1,691 82	833 20	858 62	.....	858 62	844 12	581 15	503 45	Peterborough.
.....	1,487 20	.....	1,487 20	.....	1,487 20	.....	.....	1,000 00	
305 00	.....	.....	.....	.....	.....	.....	.....	404 90	
264 00	2,175 75	739 50	1,436 25	.....	1,436 25	646 15	59 00	374 90	
529 48	.....	.....	.....	.....	.....	162 60	940 06	24 40	
133 40	4,383 74	646 10	3,737 64	268 82	3,468 82	675 00	.....	381 20	
126 45	.....	.....	.....	.....	.....	.....	.....	927 10	
8 95	.....	.....	.....	.....	.....	.....	.....	2,559 24	
429 66	1,500 12	922 06	578 06	.....	578 06	716 75	570 69	359 72	Prescott and
.....	614 40	.....	614 40	.....	614 40	.....	.....	562 00	Russell.
8 00	.....	.....	.....	.....	.....	.....	.....	44 40	
.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	
6 10	2,601 30	516 80	2,084 50	.....	2,084 50	675 00	.....	40 30	
17 80	.....	.....	.....	.....	.....	.....	.....	335 65	
291 71	.....	.....	.....	.....	.....	.....	.....	1,267 69	
147 72	1,438 60	163 48	1,275 12	.....	1,275 12	619 00	629 69	269 21	Prince
.....	615 80	.....	615 80	.....	615 80	.....	.....	615 80	Edward.
.....	.....	.....	.....	.....	.....	.....	.....	20 80	
.....	.....	.....	.....	.....	.....	.....	.....	.....	
9 20	639 64	259 00	380 64	.....	380 64	52 08	10 00	14 00	
190 76	.....	.....	.....	.....	.....	42 70	723 60	.....	
.....	2,553 90	46 50	2,507 40	74	2,506 66	600 00	.....	107 70	
.....	.....	.....	.....	.....	.....	.....	.....	341 95	
.....	.....	.....	.....	.....	.....	.....	.....	1,504 25	
636 67	2,507 25	903 81	1,603 44	.....	1,603 44	1,744 14	.....	727 64	Rainy River
.....	554 70	.....	554 70	.....	554 70	500 00	.....	.....	
54 70	.....	.....	.....	.....	.....	.....	.....	83 90	
40 00	722 65	.....	722 65	.....	722 65	461 00	.....	.....	
161 95	.....	.....	.....	.....	.....	216 60	.....	76 90	
.....	869 04	135 40	733 64	.....	733 64	450 00	.....	20 00	
.....	.....	.....	.....	.....	.....	.....	.....	289 95	
.....	.....	.....	.....	.....	.....	.....	.....	109 09	
246 80	2,410 34	1,102 24	1,308 10	.....	1,308 10	898 25	1,074 06	613 73	Renfrew.
.....	918 00	.....	918 00	.....	918 00	.....	.....	918 00	
.....	.....	.....	.....	.....	.....	.....	.....	.....	
85 00	1,013 19	360 00	653 19	.....	653 19	228 96	41 00	.....	
293 37	.....	.....	.....	.....	.....	32 80	710 43	.....	
.....	2,648 35	182 00	2,466 35	.....	2,466 35	600 00	.....	57 75	
.....	.....	.....	.....	.....	.....	.....	.....	385 40	
.....	.....	.....	.....	.....	.....	.....	.....	1,605 20	

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
SIMCOE:						
Barrie....	Sheriff	W. McL. Harvey	2,869 76	.....	2,869 76	2,233 77
	Surrogate Judge...	Judge Vance ...	Commuted	1,000 00	.....	.....
	Local Master.....	J. R. Cotter.....	43 11	.....	2,846 50	.....
	Crown Attorney...	"	1,195 24	.....	.....	770 32
	Clerk of the Peace.	"	1,608 15	.....	.....	1,029 68
	Local Registrar...	John Mackay....	97 75	750 00	1,938 75	847 75
	County Court Clerk	"	1,091 00	.....	.....	1,091 00
	Surrogate Regist'r.	E. A. Little.....	4,480 90	.....	4,480 90	4,480 90
STORMONT, DUNDAS AND GLENGARRY: Cornwall .	Sheriff	W. R. Mack.....	2,783 03	.....	2,783 03	2,179 33
	Surrogate Judge...	Judge O'Reilly..	1,000 00	.....	1,400 00	1,000 00
	Local Master.....	"	Commuted	400 00	.....	400 00
	Crown Attorney...	J. G. Harkness..	1,233 50	.....	1,937 91	820 73
	Clerk of the Peace.	"	704 41	.....	.....	454 70
	Local Registrar...	J. A. McDougald.	108 55	750 00	4,867 75	858 55
	County Court Clerk	"	629 85	.....	.....	629 85
	Surrogate Regist'r.	"	3,329 35	.....	.....	3,329 85
SUDBURY:						
Sudbury..	Sheriff	Alex. Irving	4,616 28	†950 00	5,566 28	4,664 61
	Surrogate Regist'r.	Judge Kehoe	.....	*500 00	611 70	500 00
	Local Master	"	111 70	.....	.....	111 70
	Crown Attorney...	‡G. M. Miller ...	5,511 17	250 00	6,235 87	5,022 61
	Clerk of the Peace.	"	474 70	.....	.....	297 30
	Local Registrar...	J. D. Shipley....	88 70	600 00	2,609 27	688 70
	Dist. Court Clerk..	"	1,581 40	.....	.....	1,581 40
	Surrogate Regist'r.	"	339 17	.....	.....	339 17
TEMISKAMING:						
Haileybury .	Sheriff	George Caldbick.	5,898 89	1,000 00	6,898 89	5,944 07
	Surrogate Judge...	Judge Hartman.	.....	*500 00	507 60	500 00
	Local Master.....	"	7 60	.....	.....	7 60
	Crown Attorney...	F. L. Smiley....	926 47	.....	1,449 57	612 39
	Clerk of the Peace.	"	273 10	250 00	.....	393 95
	Local Registrar ...	T. J. Meagher...	299 45	150 00	3,278 30	449 45
	District Court Cl'rk	"	1,791 20	450 00	.....	2,241 20
	Surrogate Registrar	"	587 65	.....	.....	587 65
THUNDER BAY:						
Port Arthur.....	Sheriff	A. W. Thompson.	4,560 78	1,000 00	5,560 78	4,645 19
	Surrogate Judge...	Judge O'Leary ..	.....	*500 00	596 20	500 00
	Local Master.....	"	96 20	.....	.....	39 90
	Crown Attorney...	W.F.Langworthy,	1,024 15	250 00	1,516 15	830 10
	Clerk of the Peace.	" K.C.	242 00	.....	.....	79 00
	Local Registrar...	T. S. T. Smellie.	341 43	600 00	3,164 67	941 43
	Dist. Court Clerk..	"	980 80	.....	.....	980 80
	Surrogate Regist'r.	"	1,242 44	.....	.....	1,242 44
VICTORIA:						
Lindsay ..	Sheriff	A. E. Vrooman..	1,098 29	.....	1,098 29	959 99
	Surrogate Judge...	Judge McMillan.	808 75	.....	808 75	808 75
	Local Masters ...	"	.....	.....	.....	.....
		Judge Swayze ...	36 70	.....	36 70	26 30
	Crown Attorney ...	T. H. Stinson....	350 85	.....	1,113 16	279 35
	Clerk of the Peace.	"	762 31	.....	.....	497 65
	Local Registrar ...	J. H. Sootheran .	24 00	675 00	3,083 77	699 00
	County Court Clerk	"	404 87	.....	.....	404 87
	Surrogate Regist'r.	"	1,979 90	.....	.....	1,979 90

* By R.S.O., Cap. 58, Sec. 17. ‡ Pro tem. during R. R. McKessock's absence on military duty
† $200.00 of which is salary as District Treasurer.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officers from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O. Cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
625 65	2,859 42	2,034 42	825 00	.....	825 00	1,246 67	913 11	709 98	Simcoe.
.....	1,000 00	.....	1,000 00	.....	1,000 00	1,000 00	.....	.....	
43 11	2,671 68	448 28	2,223 40	18 02	2,205 38	.....	.....	43 11	
297 18	.....	.....	.....	.....	.....	715 45	479 79	.....	
531 39	.....	.....	.....	.....	.....	302 93	1,305 22	.....	
.....	1,938 75	180 00	1,758 75	.....	1,758 75	750 00	.....	97 75	
.....	.....	.....	.....	.....	.....	.....	.....	1,091 00	
.....	4,480 90	425 00	4,055 90	427 95	3,627 95	.....	.....	4,480 90	
376 02	2,555 34	601 24	1,954 10	.....	1,954 10	814 76	745 94	1,222 28	Stormont,
.....	1,400 00	.....	1,400 00	.....	1,400 00	.....	.....	1,000 00	Dundas
.....	.....	.....	.....	.....	.....	400 00	.....	.....	and Glen-
368 03	1,839 28	247 10	1,592 18	.....	1,592 18	497 70	97 42	638 38	garry.
195 82	.....	.....	.....	.....	.....	95 60	531 67	77 14	
.....	4,867 75	1,777 39	3,090 36	68 07	3,022 29	750 00	.....	108 55	
.....	.....	.....	.....	.....	.....	.....	.....	629 85	
.....	.....	.....	.....	.....	.....	.....	.....	3,329 35	
855 83	5,320 44	2,666 85	2,653 59	.....	2,653 59	4,365 42	.....	1,200 86	Sudbury.
.....	611 70	.....	611 70	.....	611 70	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	111 70	
1,134 70	6,710 61	2,025 00	4,685 61	.....	4,685 61	4,091 17	.....	1,670 00	
256 00	.....	.....	.....	.....	.....	417 07	.....	57 63	
.....	2,609 27	364 00	2,245 27	.....	2,245 27	600 00	.....	88 70	
.....	.....	.....	.....	.....	.....	.....	.....	1,581 40	
.....	.....	.....	.....	.....	.....	.....	.....	339 17	
870 87	6,814 94	2,272 21	4,542 73	.....	4,542 73	3,124 91	.....	3,773 98	Temiskam-
.....	507 60	.....	507 60	.....	507 60	500 00	.....	.....	ing.
.....	.....	.....	.....	.....	.....	.....	.....	7 60	
270 07	1,491 66	595 00	896 66	.....	896 66	826 47	.....	100 00	
215 25	.....	.....	.....	.....	.....	478 10	.....	45 00	
.....	3,278 30	511 40	2,766 90	26 69	2,740 21	150 00	.....	299 45	
.....	.....	.....	.....	.....	.....	450 00	.....	1,791 20	
.....	.....	.....	.....	.....	.....	.....	.....	587 65	
876 02	5,521 21	2,676 64	2,844 57	.....	2,844 57	4,113 10	.....	1,447 68	Thunder
.....	568 90	.....	568 90	.....	568 90	500 00	.....	.....	Bay.
29 00	.....	.....	.....	.....	.....	.....	.....	96 20	
389 80	1,729 25	108 00	1,621 25	.....	1,621 25	1,274 15	.....	.....	
180 35	.....	.....	.....	.....	.....	242 00	.....	.....	
.....	3,164 67	736 95	2,427 72	.....	2,427 72	600 00	.....	341 43	
.....	.....	.....	.....	.....	.....	.....	.....	980 80	
.....	.....	.....	.....	.....	.....	.....	.....	1,242 44	
344 94	1,304 93	463 51	841 42	.....	841 42	489 00	521 84	87 45	Victoria.
.....	808 75	.....	808 75	.....	808 75	.....	.....	808 75	
.....	.....	.....	.....	.....	.....	.....	.....	.....	
21 80	48 10	.....	48 10	.....	48 10	.....	.....	36 70	
76 00	1,147 36	430 85	716 51	.....	716 51	300 85	.....	50 00	
294 36	.....	.....	.....	.....	.....	47 50	714 81	.....	
.....	3,083 77	442 30	2,641 47	14 15	2,627 32	675 00	.....	24 00	
.....	.....	.....	.....	.....	.....	.....	.....	404 87	
.....	.....	.....	.....	.....	.....	.....	.....	1,979 90	

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
WATERLOO: Kitchener	Sheriff	H. G. Lackner	2,619 71		2,619 71	1,780 69
	Surrogate Judge	*Judge Reade	1,000 00		1,000 00	1,000 00
	Local Master	J. J. A. Weir	129 00		129 00	79 00
	Crown Attorney	D. S. Bowlby	1,189 10		2,269 90	957 10
	Clerk of the Peace.	"	1,080 80			1,052 55
	Local Registrar	E. J. Beaumont	194 15	675 00	1,592 50	860 85
	County Court Clerk	"	723 35			678 35
	Surrogate Regist'r.	John M. Scully.	4,856 53		4,856 53	4,138 28
WELLAND: Welland	Sheriff	James Smith	3,668 22		3,668 22	2,940 14
	Surrogate Judge	Judge Livingstone.	1,000 00		1,071 00	1,000 00
	Local Master	"	71 00			71 00
	Crown Attorney	T. D. Cowper	1,938 60		3,620 01	1,405 60
	Clerk of the Peace.	"	1,681 41			1,170 32
	Local Registrar	J. E. Cohoe	71 20	800 00	4,331 05	871 20
	County Court Clerk	"	837 65			837 65
WELLINGTON: Guelph	Surrogate Regist'r.	"	2,622 20			2,622 20
	Sheriff	A. S. Allan	2,272 66		2,272 66	1,838 93
	Surrogate Judge	Judge Chadwick	Commuted	1,000 00	1,000 00	
	Local Master	W. H. Kingston,	383 08		5,167 06	383 08
	Local Registrar	" K.C.	255 72			243 42
	County Court Clerk	"	671 45			595 95
	Surrogate Regist'r.	"	3,856 81			3,670 83
	Crown Attorney	A. H. Macdonald,	217 49		2,080 09	195 88
	Clerk of the Peace	" K.C.	1,862 60			1,808 25
WENTWORTH: Hamilton	Sheriff	J. T. Middleton	8,085 59		8,085 59	6,309 93
	Surrogate Judge	Judge Snider	1,500 00		1,500 00	
	"	‡Judge Gauld	1,000 00		1,802 60	1,000 00
	Local Master	"	802 60			448 90
	Crown Attorney	S. F. Washington,	4,925 97		7,701 35	3,645 17
	Clerk of the Peace.	" K.C.	2,775 38			1,809 09
	Local Registrar	H. C. Gwyn, K.C.	69 02	750 00	10,578 87	819 02
	County Court Clerk	"	3,352 25			3,352 25
	Surrogate Regist'r.	"	6,407 60			6,407 60
YORK: Toronto	Sheriff	Alex. McCowan	14,040 13		14,040 13	12,112 48
	Surrogate Judges	Judge Winchester.	2,600 00		2,600 00	
		Judge Morgan	1,600 00		1,600 00	
		Judge Morson	1,600 00		1,600 00	
		Judge Denton	1,600 00		1,600 00	
		Judge Coatsworth.	1,600 00		1,600 00	
	Crown Attorney	R. H. Greer	9,954 30		9,954 30	7,502 40
	Clerk of the Peace	H. E. Irwin, K.C.	4,124 47		4,124 47	4,124 47
	County Court Clerk	†R. A. Pyne	14,568 75		14,568 75	14,568 75
	Surrogate Regist'r.	A. F. Wallis	29,896 12		29,896 12	29,896 12
TORONTO:	Sheriff	Fred'k Mowat	26,457 14		26,457 14	22,440 76
	Crown Attorney	J.W.S.Corley, K.C.	Commuted	6,000 00	¶7,099 62	

* Died 26th January, 1919.

‡ In April J. G. Gauld, K.C., was appointed a County Judge in the room and stead of Judge Monck, resigned, up to which time he was Deputy Judge.

† Appointed by O.-in-C. 23rd May, 1918.

⁂Payable by City of Toronto, $939.50, by Dominion Government $10.00.

¶$1,099.62 commission on fines. ** 88% payable by City of Toronto.

Officers throughout the Province of Ontario, etc.—Concluded.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O. Cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
863 08	2,643 77	901 47	1,742 30	.....	1,742 30	874 24	708 44	1,037 03	Waterloo.
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
167 75	246 75	.....	246 75	.....	246 75	.....	.....	129 00	
386 35	2,467 05	570 00	1,897 05	.....	1,897 05	904 50	284 60	.....	
71 05	.....	.....	.....	.....	.....	80 80	1,000 00	.....	
.....	1,625 56	426 00	1,199 56	.....	1,199 56	675 00	.....	194 15	
86 36	.....	.....	.....	.....	.....	.....	.....	723 35	
431 55	4,569 83	843 72	3,726 11	263 05	3,463 06	.....	.....	4,856 63	
717 66	3,657 80	1,228 75	2,429 05	.....	2,429 05	1,417 75	814 44	1,436 03	Welland.
.....	1,071 00	.....	1,071 00	.....	1,071 00	.....	.....	1,000 00	
.....	.....	.....	.....	.....	.....	.....	.....	71 00	
431 80	3,558 53	984 00	2,574 53	64 90	2,509 63	1,254 60	284 00	400 00	
550 81	.....	.....	.....	.....	.....	258 40	1,370 01	53 00	
.....	4,331 05	1,111 64	3,219 41	91 88	3,127 53	800 00	.....	71 20	
.....	.....	.....	.....	.....	.....	.....	.....	837 65	
.....	.....	.....	.....	.....	.....	.....	.....	2,622 20	
365 69	2,204 62	646 12	1,558 50	.....	1,558 50	647 40	863 20	762 06	Wellington.
.....	.....	.....	1,000 00	.....	1,000 00	1,000 00	.....	.....	
.....	4,893 28	493 35	4,399 93	408 43	3,991 50	.....	.....	383 08	
.....	.....	.....	.....	.....	.....	.....	.....	255 72	
.....	.....	.....	.....	.....	.....	.....	.....	671 45	
.....	.....	.....	.....	.....	.....	.....	.....	3,856 81	
90 00	2,185 66	403 60	1,782 06	.....	1,782 06	186 49	21 00	10 00	
91 53	.....	.....	.....	.....	.....	66 50	1,700 00	96 10	
955 54	7,265 47	2,834 87	4,430 60	.....	4,430 60	3,642 94	1,067 91	3,374 74	Wentworth
.....	1,500 00	.....	1,500 00	.....	1,500 00	.....	.....	1,500 00	
.....	1,717 90	.....	1,717 90	.....	1,717 90	.....	.....	1,000 00	
269 90	.....	.....	.....	.....	.....	.....	.....	802 60	
1,184 72	7,361 13	2,365 37	4,995 76	1,047 88	3,947 88	4,775 47	.....	150 50	
722 15	.....	.....	.....	.....	.....	765 36	1,981 42	28 60	
.....	10,578 87	2,486 19	8,092 68	3,683 41	4,409 27	750 00	.....	69 00	
.....	.....	.....	.....	.....	.....	.....	.....	3,352 25	
.....	.....	.....	.....	.....	.....	.....	.....	6,407 60	
1,732 28	13,844 76	7,325 96	6,518 80	16 92	6,501 88	10,799 03	1,157 32	2,083 78	York.
.....	.....	.....	.....	.....	.....	.....	.....	2,600 00	
.....	.....	.....	.....	.....	.....	.....	.....	1,600 00	
.....	.....	.....	.....	.....	.....	.....	.....	1,600 00	
.....	.....	.....	.....	.....	.....	.....	.....	1,600 00	
.....	.....	.....	.....	.....	.....	.....	.....	1,600 00	
1,383 00	8,885 40	1,829 10	7,056 30	2,078 15	4,978 15	8,552 30	**1,402 00	.....	
992 69	5,117 16	2,904 10	2,213 06	21 30	2,191 76	2,483 80	761 26	879 41	
.....	14,568 75	4,794 70	9,774 05	5,196 65	4,577 40	.....	.....	14,568 75	
.....	29,896 12	5,223 74	24,672 38	18,605 15	6,067 23	.....	.....	29,896 12	
3,461 95	25,902 71	17,349 09	8,553 62	1,848 26	6,705 36	5,738 24	‡ 1,402 18	19,316 72	Toronto.
.....	.....	.....	7,099 62	.....	7,099 62	6,000 00	.....	1,099 62	

APPENDIX G.—Table showing the business of the High Court Division of the Supreme Court of Ontario, transacted in Toronto during 1918, compiled from statements furnished by the officers at Osgoode Hall.

CENTRAL OFFICE.

CLERK OF RECORDS AND WRITS:—

Writs of summons issued, of which 47 were concurrent writs	1,579
Actions entered in Procedure Book commenced by writs issued during the year 1918	777
" " " " " previous year	44
" " " otherwise than by writ	105
Præcipe Orders issued	93
Records passed	401
Writs of Execution Fi. Fa. issued	392
" renewed, and Alias and Pluries Writs issued	189
Special writs (Habeas Corpus, etc.) issued	42

CLERK IN CHAMBER:—

Chamber Orders and Fiats	3,237
Chamber fylings	4,877

OFFICE OF THE REGISTRARS:—

Actions entered for trial with Jury	71
" " without a Jury	63
" tried with a Jury	292
" " without a Jury	183
Amount of Jury fees paid City Treasurer	$216 00

JUDGMENT CLERK:—

Court orders	65
Deeds Poll entered and filed	98
Judgments entered without trial	77
" " after trial	159
" in Chambers	44
" under Con. Rule 600	50
" " " " 467 by default	250
" " " " 35 "	200
" in mechanics' lien actions	25
" of official referees	30
" entered in respect of Writs issued in the year 1910	1
" " " " " 1911	4
" " " " " 1912	2
" " " " " 1913	3
" " " " " 1914	10
" " " " " 1915	20
" " " " " 1916	40
" " " " " 1917	100
" " " " " 1918	655
Total judgments entered	835
Judgments from outer counties recorded	823
Approximate amount recovered on Judgments (exclusive of costs)	$4,510,301 20
Amount of Taxed costs (including disbursements) on judgments of all kinds	$47,205 02

OFFICE OF THE INSPECTOR AND REFEREE OF TITLES.

Petitions received under The Quieting Titles Act	10
Certificates of Title granted under The Quieting Titles Act	8
Matters pending	16

ACCOUNTANT'S OFFICE.

Amount of moneys paid into Court	$3,193,005 98
" " " out of Court	3,452,270 74
Number of directions issued for payments of moneys into Court	1,972
" cheques issued	5,831
" certificates issued	93
" new accounts opened	982

APPENDIX G.—Table showing the business of the High Court Division of the Supreme Court of Ontario, transacted in Toronto, etc.—Continued.

OFFICE OF THE MASTER IN ORDINARY.

References before Master and Assistant Master.	Master.	Assistant Master.
Trustees accounts	.....	.....
Partition	.....	.....
Foreclosure	118†	.....
Administration	3	.....
Title	1	.....
Partnership	.....	.....
Alimony	1	.....
Winding up	9	.....
Lunacy	3	.....
Executors' accounts	.....	.....
Mechanics' liens	.....	46*
Heirs	.....	.....
Sale	4	.....
Damages	2	.....
Redemption or sale	.....	.....
Receivership	.....	.....
Settling conveyances	.....	.....
Specific performance	.....	.....
Accounts	6	.....
Trials	.....	.....
	147	46

Orders issued by the Master in Winding-up Matters, 21.
* 18 of these were taken before Mr. Roche, acting for the Assistant Master.
† All of these were taken by the Chief Clerk of the Master's office.

REFERENCES BEFORE OFFICIAL REFEREES.

——	Master in Chambers.	Mr. McAndrew	Total
Sale	.....	.....	.....
Specific Performance	.....	.....	.....
Trial or assessment	5	.....	5
Trustees and Executors' accounts	.....	.....	.....
Winding up	19	.....	19
Lunacy	.....	.....	.....
Accounts	.....	.....	.....
Mechanics' liens	.....	.....	.....
Title	.....	.....	.....
Partition or sale	.....	.....	.....
Administration	1	.....	.....
Receivership	1	.....	.....
Foreclosure	.....	.....	.....
Under Arbitration Act	.....	.....	.....
Vendor and Purchaser	.....	.....	.....
Partnership accounts	2	.....	.....
	28	nil	24

FEES PAID IN LAW STAMPS.

Clerk Records and Writs			$7,528 39
Judgment Clerk			3,301 80
Registrars' office	For Fee Fund	$733 10	1,810 10
	For Shorthand Reporters' Fund	1,077 00	
Clerk in Chambers			3,075 90
Office of the Inspector and Referee (Quieting Titles)			404 90
Accountant's office			943 78
Master in Chambers as Official Referee			392 50
Master in Ordinary			2,431 80
Assistant Master-in-Ordinary			28 00
Registrar of the Court of Appeal			1,520 20

APPENDIX H.—Table showing the number of actions tried or otherwise disposed of by the Judges of the High Court Division and of the Divisional Courts of the Appellate Division of the Supreme Court of Ontario, and the disposition thereof during the year ending Dec. 31st, 1918.

Trial Judges.

Actions tried or otherwise disposed of by the Judges of the High Court Division of the Supreme Court of Ontario.

County or District.	With a Jury.	Without a Jury.	Total.
Algoma	1		1
Brant	2	5	7
Bruce	2	2	4
Carleton	3	16	19
Dufferin	1	2	3
Elgin	3	2	5
Essex	9	53	62
Frontenac		5	5
Grey		9	9
Haldimand	1	3	4
Halton			0
Hastings	1	3	4
Huron		15	15
Kenora		3	3
Kent	4	4	8
Lambton	1	8	9
Lanark		2	2
Leeds and Grenville		3	3
Lennox and Addington	1	5	6
Lincoln	1	10	11
Manitoulin			0
Middlesex	4	20	24
Muskoka			0
Nipissing		2	2
Norfolk	1	1	2
Northumberland and Durham		4	4
Ontario	2	1	3
Oxford	1	2	3
Parry Sound	1	2	3
Peel		1	1
Perth	1	7	8
Peterborough		5	5
Prescott and Russell		1	1
Prince Edward	2	2	4
Rainy River		4	4
Renfrew	1		1
Simcoe		3	3
Stormont, Dundas and Glengarry	6	4	10
Sudbury	3	2	5
Temiskaming		2	2
Thunder Bay		4	4
Victoria		1	1
Waterloo		5	5
Welland	4	4	8
Wellington	1	2	3
Wentworth	13	37	50
York	63	183	246
Totals	133	449	582

APPENDIX H.—Table showing the number of actions tried, etc.—Continued.

Judges in Chambers.	Allowed or varied.	Dismissed.	Standing for Judgment.	Total.
Toronto:—				
Appeals from the Masters in Chambers	30	22		52
" Acting Masters in Chambers	5	5		10
" Local Masters and other officers acting in Chambers	8	6		14
Appeals from Official Referees		1		1
" Local Taxing Officers	1	3		4
" Taxing Officers at Toronto	2	3		5
Motions, other than appeals				1,180
Ottawa:—				
Appeals from Local Masters and other officers acting in Chambers	1			1
Motions, other than appeals	13	3		16
London:—				
Appeals from Local Masters or other officers acting in Chambers	1	1		2
Appeals from Taxing Officers	1			1
Motions, other than appeals	37	4	1	42
Totals	99	48	1	1,328

Weekly Courts.	Allowed.	Dismissed.	Standing for Judgment or Abandoned.	Total.
Toronto:—				
Appeals from reports and orders of Local Masters and Official Referees	11	13		24
Appeals from awards and motions to set aside awards		2		2
Motions, other than appeals	576	44	23	643
Number struck off the list, no one appearing				18
" of motions enlarged				247
Ottawa:—				
Appeals from Local Judges	1			1
Appeals from reports of Local Masters and Official Referees				
Motions, other than appeals	21	2		23
London:—				
Motions, other than appeals	41	2	1	44
Appeals from reports of Local Masters and Official Referees				
Totals	650	63	24	1,002

Master in Chambers:—	
Motions in respect of pleadings, for particulars, for discovery and for commissions to take evidence	301
Motions in respect of venue, to set aside jury notices and notices of trial and proceedings under quo warranto	48
Motions for judgments and orders	422
Motions setting aside judgments or orders, staying trials, and dismissing actions	430
Miscellaneous motions	419
Ex parte motions	401
Motions taken by the Master-in-Ordinary and Official Referees acting for the Master in Chambers	253
Total	2,274

APPENDIX H.—Table showing the number of actions tried, etc.—Continued.

Appellate Division (Divisional Courts Nos. 1 & 2).	Allow'd.	Dismissed.	Varied.	Standing for		Withdrawn.	Total.
				Argument. *	Judgment		
Appeals from Single or Trial Judges	67	115	30	20	18	24	274
Appeals from Board of County Judges.							
Appeals from Arbitrators		1					1
Cases stated under the Assessment Act	1						1
Appeals from Official Referees	1	1					2
Appeals from the Ontario Railway and Municipal Board		3					3
Election Recounts							
Habeas Corpus Appeals		3					3
Reserved and stated cases under criminal code	3	4			2		9
Appeals from County, District and Division Courts	37	75	13	1	8		134
Appeals from Surrogate Courts		1					1
Appeals from Mining Commissioner							
" " Local Masters							
Submitted under Con. Questions Act							
Referred under Orders in Council							
Questions in Civil Matters referred by Judges							
Appeals from Council of College of Physicians and Surgeons							
Totals	109	203	43	21	28	24	428

Motions to full Court 346
Judgments Orders and Certificates thereof issued 428
Number of Cases set down during 1918 .....

* The cases not ready to be heard are not included.

APPENDIX "I."

TABLE showing the business in the office of the Surrogate Clerk, Osgoode Hall, Toronto, for the year ending December 31st, 1918.

Notices of application for Probate received and Certificates issued	6,445
Notices of application for Administration received and Certificates issued	4,106
Notices of application for membership received and Certificates issued	87
Caveats fyled	95
Fees paid in Law Stamps	$5,272 38

APPENDIX J.—Table showing the Criminal business of the High Court Division of the Supreme Court of Ontario at its sittings throughout the Province during the year 1918.

County or District.	Bills.		Nolle prosequi.	Indictments quashed.	Traversed to the Sessions.	Number of persons pleading guilty.	Number of persons tried.		Verdicts after trial.				Number of days of sittings.
	True.	No.					With a Jury.	Without a Jury.	Guilty.	Not guilty.	Disagreed.	Reserved.	
Algoma	10	1	....	....	1	4	8	.....	5	5	....	....	7
Brant	3	....	....	....	....	1	2	.....	1	1	....	....	5
Bruce	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Carleton	5	1	....	....	....	....	5	.....	1	4	1	....	4
Dufferin	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Elgin	....	....	....	....	....	....	.....	.....	.....	.....	....	....	2
Essex	14	....	....	....	1	....	7	.....	6	1	....	....	4
Frontenac	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Grey	2	....	....	....	....	....	2	.....	.....	2	....	....	7
Haldimand	1	....	....	....	....	....	1	.....	.....	1	....	....	....
Halton	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Hastings	3	....	....	....	....	....	8	.....	2	6	....	....	11
Huron	1	....	....	....	....	1	.....	1	1	.....	....	....	2
Kenora	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Kent	1	....	....	....	....	....	1	.....	1	.....	....	....	....
Lambton	2	....	....	....	....	....	.....	1	....	.....	....	1	2
Lanark	5	....	....	....	....	....	5	.....	2	3	....	....	7
Leeds and Grenville	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Lennox and Addington	2	....	....	....	....	....	2	.....	1	1	1	....	3
Lincoln	2	....	....	....	....	....	2	.....	2	.....	....	....	4
Manitoulin	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Middlesex	....	1	....	....	....	....	.....	.....	.....	.....	1	....	1
Muskoka	6	....	....	....	....	....	4	.....	3	1	....	....	4
Nipissing	1	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Norfolk	1	2	....	....	....	....	1	.....	1	.....	....	....	3
Northumberland & D'm	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Ontario	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Oxford	1	....	....	....	....	....	1	.....	1	.....	....	....	3
Parry Sound	1	....	....	....	....	....	2	.....	2	1	....	....	13
Peel	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Perth	1	1	....	....	....	....	1	.....	.....	1	....	....	4
Peterborough	3	....	....	....	....	1	2	.....	1	1	1	....	4
Prescott and Russell	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Prince Edward	1	....	....	....	....	....	1	.....	.....	.....	1	....	1
Rainy River	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Renfrew	1	....	....	....	....	....	1	.....	.....	1	....	....	4
Simcoe	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Stormont, D's and G'y	1	....	....	....	....	....	1	.....	1	.....	....	....	4
Sudbury	5	1	....	....	....	....	4	.....	3	1	....	....	8
Temiskaming	5	1	....	....	....	2	3	.....	2	1	....	....	4
Thunder Bay	1	....	....	....	1	....	.....	.....	.....	.....	....	....	1
Victoria	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Waterloo	5	2	....	....	1	....	5	.....	1	4	3	....	6
Welland	4	1	....	1	....	....	3	.....	3	.....	....	....	6
Wellington	....	....	....	....	....	....	.....	.....	.....	.....	....	....	....
Wentworth	4	1	....	....	....	....	4	.....	2	1	....	....	9
York	39	5	2	....	....	5	30	.....	21	11	3	....	56
Totals	131	17	2	1	4	14	106	2	63	47	11	1	189

APPENDIX K.—Table showing the business of the Courts of General Sessions of the Peace and of the District and County Court Judge's Criminal Courts of the Province for the year 1918.

County or District.	Bills in Sessions. 12		Cases C. C. J. C. C.	Number of Persons Pleading Guilty.		Number of Persons Tried.		Verdicts after Trial.					Persons Accused.				Days of Sittings.	
						With Jury.	Without Jury.	Guilty.		Not Guilty.		Disagreed.	Sessions.		C. C. J. C. C			
	True.	No.		Sessions.	C. C. J. C. C.	Sessions.	C. C. J. C. C.	Sessions.	C. C. J C. C.	Sessions.	C. C. J. C. C.		Male.	Female.	Male.	Female.	Sessions.	C. C. J. C. C.
Algoma	2	1	33	.....	14	3	19	.....	6	2	13	.....	3	.....	30	3	3	36
Brant	.....	.....	26	.....	3	.....	20	.....	11	.....	9	.....	.....	.....	18	2	2	16
Bruce	.....	.....	32	.....	20	.....	32	.....	20	.....	12	12	.....	.....	31	1	2	27
Carleton	.....	.....	18	.....	5	.....	.....	.....	9	.....	3	.....	.....	.....	14	3	5	44
Dufferin	2	.....	5	.....	3	1	1	.....	1	1	.....	.....	1	.....	4	.....	3	3
Elgin	1	.....	35	.....	10	1	27	.....	25	1	10	.....	1	.....	25	2	3	45
Essex	.....	.....	27	.....	.....	.....	27	.....	10	.....	17	.....	.....	.....	23	4	3	23
Frontenac	3	.....	9	1	2	3	9	1	5	2	4	.....	3	.....	8	1	5	9
Grey	1	.....	7	.....	2	1	5	.....	3	1	2	.....	1	.....	7	.....	6	7
Haldimand	2	.....	4	.....	3	2	4	2	1	.....	.....	.....	2	.....	3	1	7	7
Halton	2	.....	9	1	4	.....	12	1	7	.....	5	.....	1	.....	9	3	2	6
Hastings	8	3	27	.....	5	8	17	.....	17	.....	10	.....	8	3	27	.....	12	22
Huron	1	1	18	.....	13	.....	15	.....	1	.....	1	.....	.....	.....	15	.....	2	16
Kenora	.....	.....	3	.....	1	.....	1	.....	1	.....	.....	.....	.....	.....	1	.....	2	1
Kent	2	1	19	.....	.....	2	19	.....	15	2	4	.....	3	.....	15	4	2	19
Lambton	3	.....	22	.....	5	3	18	1	14	2	8	.....	3	.....	15	3	4	30
Lanark	.....	.....	5	.....	2	.....	5	.....	2	.....	3	.....	.....	.....	4	1	2	6
Leeds and Grenville	3	.....	47	.....	33	3	15	.....	6	3	8	.....	3	.....	45	3	4	65
Lennox and Addington	1	.....	2	.....	1	1	1	1	2	.....	.....	.....	.....	.....	1	.....	4	1
Lincoln	9	3	23	.....	5	.....	23	.....	12	.....	10	10	.....	.....	21	2	6	36
Manitoulin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Middlesex	8	1	17	.....	5	8	12	4	5	4	7	.....	8	.....	14	.....	10	33

Muskoka	4		15		2	4	15	1	13	3	2		3	1	12	3	4	7
Nipissing			2				2		2						2		2	3
Norfolk	4	3	12	2	9	5	6	2	9	1	3	1	8		6		9	4
Northumberland and Durham	2		18		10		22		17		5		2		21	1	4	33
Ontario			9		3		9		6		3				8	1		11
Oxford	2		2			2	2	1	2	1			2		2		4	2
Parry Sound			7		1		7		6		1				7			7
Peel	2	1	12	1	9	2	15	1	12		3	1	2	1	15	1	3	12
Perth			26		11		15		7		8				4	5	3	35
Peterborough	3		3			3	2	2		3	3		2	1	2		6	2
Prescott and Russell *																		
Prince Edward			1				1		1							1		1
Rainy River	1		3			1	3		1	1	2	3	1		3		2	4
Renfrew	1				1	1	3		3	1			1		3		1	3
Simcoe	4		18		5	4	14	2					4		14		7	12
Stormont, Dundas and Glengarry			9		7		2		2		17				8	1	2	6
Sudbury			43		12		43		26		17	17			38	5	6	24
Temiskaming			19		3		19		10		9		18	1	18	1		19
Thunder Bay			12		8		4		3		1	1			8		2	16
Victoria			1		1		1								1			1
Waterloo	1		6		1		4				1	2	1		4		1	9
Welland	12		13		8	12	5			12	3		12		13		8	13
Wellington																		
Wentworth	2		153		61	1	166		64	1	41		2	1	151	15		50
York	152	9	427	16	137	87	295	51	167	24	97	7	177	11	517	46	112	128
Totals	238	23	1,199	21	425	158	837	70	524	65	342	54	272	19	1,187	113	265	854

*Returns not received.

APPENDIX "L."

Officers Appointed During 1918.

Sheriffs.

William Carney, of the City of Sault Ste. Marie, in the Provisional Judicial District of Algoma, Esquire, to be Sheriff in and for the said Provisional Judicial District of Algoma, in the room and stead of W. H. Carney, Esquire, deceased.—*Gazette, January 19th.*

Albert John Johnston, of the City of Sarnia, in the County of Lambton, Esquire, to be Sheriff in and for the said County of Lambton in the room and stead of J. Flintoft, Esquire, deceased.—*Gazette, June 22nd.*

W. H. Elliott, Esquire, New Sarum, appointed Sheriff in and for the County of Elgin, in the room and stead of Dugald McColl, deceased, by Order-in-Council, *25th June.*

Walter Tisdale, Esquire, M.D., of the Village of Lynedoch, appointed Sheriff in and for the County of Norfolk, in the room and stead of F. S. Snider, deceased, by Order-in-Council, *9th May.*

Local Masters.

His Honour Lewis H. Dickson, Judge of the County Court of the County of Huron, to be Local Master of the Supreme Court of Ontario in and for the said County of Huron in the room and stead of His Honour Judge Doyle, retired.—*Gazette, March 2nd.*

Local Registrars, County Court Clerks, Surrogate Registrars.

John Strachan Lewis McNeely, of the Town of Carleton Place, in the County of Lanark, Esquire, Barrister-at-Law, to be Local Registrar of the Supreme Court, Clerk of the County Court and Registrar of the Surrogate Court in and for the said County of Lanark in the room and stead of W. P. McEwan, Esquire, deceased.—*Gazette, April 6th.*

Peter McDonald, of the City of Woodstock, in the County of Oxford, Esquire, Barrister-at-Law, to be Local Registrar, Clerk of the County Court and Registrar of the Surrogate Court in and for the County of Oxford, in the room and stead of James Canfield, Esquire, deceased.—*Gazette, August 10th.*

Dr. Robert Allan Pyne, of the City of Toronto, appointed Clerk of the County Court of the County of York, by Order-in-Council, *May 23rd.*

Police Magistrates.

Alexander Henry Marshall Graydon, of the City of London, in the County of Middlesex, Esquire, Barrister-at-Law, to be Police Magistrate in and for the said City of London, in the room and stead of J. C. Judd, Esquire, resigned.—*Gazette, January 12th.*

Ira Harvey Perigoe, of the Village of Port McNicoll, in the County of Simcoe, Esquire, to be Police Magistrate in and for the said Village of Port McNicoll.—*Gazette, February 23rd.*

Joseph Joshua Jarvis, of the Village of Mooretown, in the County of Lambton, Esquire, to be Police Magistrate in and for the Village of Point Edward

and the Township of Sarnia (including the Sarnia Indian Reservation), and the Township of Moore, in the said County of Lambton.—*Gazette, March 16th.*

James Mitchell Dafoe, of the Township of Kaladar, Flinton P.O., in the County of Frontenac, Esquire, to be Police Magistrate in and for the Township of Kenebec and Barrie, in the said County of Frontenac, and the Townships of Kaladar, Anglesea, Effingham, Ashby, Denbigh and Abinger, in the County of Lennox and Addington.—*Gazette, March 16th.*

Walter E. Kelly, Police Magistrate in and for the Town of Goderich and the Township of Goderich, Esquire, Police Magistrate in and for the Township of Colborne, Ashfield, East Wawanosh and West Wawanosh, in the County of Huron.—*Gazette, March 16th.*

William R. Butcher, of the Town of St. Mary's, in the County of Perth, Esquire, to be Police Magistrate in and for the said Town of St. Mary's, in the room and stead of George D. Lawrie, Esquire, deceased.—*Gazette, March 23rd.*

John E. Askwith, Esquire, Deputy Police Magistrate for the City of Ottawa, to be Police Magistrate in and for the said City of Ottawa, in the room and stead of George O'Keefe, Esquire, resigned.—*Gazette, April 13th.*

William John Kidd, of the City of Ottawa, in the County of Carleton, Esquire, Barrister-at-Law, to be Deputy Police Magistrate in and for the said City of Ottawa.—*Gazette, April 13th.*

Jasi Alexander Morton, Police Magistrate in and for the Town of Wingham, to be Police Magistrate in and for the Townships of Turnberry, Howick and Morris, and the Villages of Brussels, Blyth and Wroxeter.—*Gazette, May 11th.*

Adam Robert Graham Peden, of the Town of Carleton Place, in the County of Lanark, Esquire, to be Police Magistrate in and for the said Town of Carleton Place, in the room and stead of John S. L. McNeely, Esquire, resigned.—*Gazette, May 18th.*

Charles A. Reid, of the Town of Goderich, in the County of Huron, to be Police Magistrate in and for the said Town of Goderich and in and for the Townships of Goderich, Colborne, Ashfield, East Wawanosh and West Wawanosh, in the room and stead of Walter E. Kelly, Esquire, resigned.—*Gazette, June 22nd.*

William Herbert Floyd, of the Town of Cobourg, in the County of Northumberland, to be Police Magistrate in and for the said Town of Cobourg, in the room and stead of Frederick D. Boggs, Esquire, resigned.—*Gazette, August 3rd.*

George Moore, Police Magistrate, in and for the Town of Parry Sound, Esquire, be also appointed Police Magistrate in and for the District of Parry Sound.—*Gazette, August 10th.*

Philip Henry Bartlett, of the City of London, in the County of Middlesex, Esquire, Barrister-at-Law, to be Deputy Police Magistrate in and for the said City of London.—*Gazette, August 3rd.*

Douglas Davidson, Police Magistrate in and for the Town of Mimico, to be also appointed Police Magistrate, with jurisdiction as provided by Section 6 of "The Toronto and Hamilton Highway Commission Act, 1917," in the room and stead of Shirley Armstrong Cummiford, resigned.—*Gazette, September 14th.*

George Henry Treffry, Otterville, R. R. No. 2, Esquire, to be Police Magistrate in and for the Police Village of Otterville in the room and stead of Alexander McFarlane, deceased.—*Gazette, September 14th.*

Peter Van-Alstyne Ellis, of the City of Toronto in the County of York, Esquire, to be Third Police Magistrate in and for the said City of Toronto.—*Gazette, September 14th.*

JACOB COHEN, of the City of Toronto, in the County of York, Esquire, to be Fourth Police Magistrate in and for the said City of Toronto.—*Gazette, September 14th.*

WILLIAM LAIDLAW, of the Town of Durham, in the County of Grey, Esquire, to be Police Magistrate in and for the said Town of Durham.—*Gazette, September 21st.*

WILLIAM HAMILTON, of the Town of Uxbridge, in the County of Ontario, Esquire, to be Police Magistrate in and for the said Town of Uxbridge, without salary.—*Gazette, September 28th.*

JAMES ALBERT PAGE, of the Town of Brockville, in the County of Leeds, Esquire, Barrister-at-Law, to be Police Magistrate in and for the said Town of Brockville, in the room and stead of Joseph Deacon, deceased.—*Gazette, September 28th.*

CHARLES HOWARD TANNER, of the Town of Ridgetown, in the County of Kent, Esquire, Barrister-at-Law, to be Police Magistrate in and for the Town of Ridgetown, in the room and stead of Joseph Warner Murphy, Esquire, resigned.—*Gazette, November 9th.*

JOSEPH TWEEDDALE KIRKLAND, of the Town of Almonte, in the County of Lanark, Esquire, to be Police Magistrate in and for the said Town of Almonte in the room and stead of Joseph Paul, resigned.—*Gazette, November 16th.*

JOSEPH CORNELIUS GORMLEY, of the Town of Alexandria, in the County of Glengarry, Esquire, M.D., to be an Associate Coroner in and for the United Counties of Stormont, Dundas and Glengarry.—*Gazette, January 19th.*

CORONERS.

DUNCAN ALLISON, of New Toronto, in the County of York, Esquire, M.D., to be an Associate Coroner in and for the said County of York.—*Gazette, February 2nd.*

HECTOR EDGAR MONTGOMERY, of the Town of Timmins, in the District of Temiskaming, Esquire, to be an Associate Coroner in and for the said District of Temiskaming.—*Gazette, February 23rd.*

ARTHUR LIPMAN, of St. Joseph's Island, (Richard's Landing P.O.), in the District of Algoma, Esquire, M.D., to be an Associate Coroner in and for the said District of Algoma.—*Gazette, April 6th.*

JOSEPH HENRY OLIVER, of Sunderland P.O., in the County of Ontario, Esquire, M.D., to be an Associate Coroner in and for the said County of Ontario.—*Gazette, June 22nd.*

JOHN HENRY LEEDS, of Wellandport, in the County of Lincoln, Esquire, M.D., to be an Associate Coroner in and for the said County of Lincoln.—*Gazette, June 22nd.*

WILLIAM EDWARD STOREY, of the Village of Kemptville, in the United Counties of Leeds and Grenville, Esquire, M.B., to be an Associate Coroner in and for the said United Counties of Leeds and Grenville.—*Gazette, July 20th.*

JOHN KNOX BLAIR, of the Village of Arthur, in the County of Wellington, Esquire, M.D., to be an Associate Coroner in and for the said County of Wellington.—*Gazette, July 27th.*

HAROLD RICHMOND BARKER, of the Village of Sharbot Lake, in the County of Frontenac, Esquire, M.D., to be an Associate Coroner in and for the said County of Frontenac.—*Gazette, July 27th.*

Frank E. Beacham McGilvery, of the Town of Simcoe, in the County of Norfolk, Esquire, M.D., to be an Associate Coroner in and for the said County of Norfolk.—*Gazette, August 3rd.*

Austin Evans, of the City of Toronto, in the County of York, Esquire, M.B., L.M., to be an Associate Coroner in and for the said County of York.—*Gazette, August 10th.*

William J. Logie, of the Town of Paris, in the County of Brant, Esquire, M.D., to be an Associate Coroner in and for the County of Brant.—*Gazette, October 5th.*

Stephen Foster Millen, of the Village of South Woodslee, in the County of Essex, Esquire, M.D., to be an Associate Coroner in and for the County of Essex.—*Gazette, October 12th.*

Donald Roy Young, of Emo Post Office, in the District of Rainy River, Esquire, M.D., to be an Associate Coroner in and for the District of Rainy River.—*Gazette, November 9th.*

Robert Howard Fleming, of Todmorden Post Office, in the County of York, Esquire, M.D., to be an Associate Coroner in and for the County of York.—*Gazette, November 9th.*

ANNUAL REPORT

OF THE

Inspector of Registry Offices

FOR THE

PROVINCE OF ONTARIO

1918

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

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TORONTO.

To His Honour Sir John Strathearn Hendrie, K.C.M.G., C.V.O., a Colonel in the Militia of Canada, etc., etc.,

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned begs respectfully to present to Your Honour the Annual Report of the Inspector of Registry Offices for the year 1918.

I. B. Lucas,

Attorney General.

Toronto, March 19th, 1919.

REPORT

OF THE

INSPECTOR OF REGISTRY OFFICES

FOR THE YEAR 1918

To the Honourable I. B. Lucas, K.C.,

Attorney General of the Province of Ontario.

Sir,—I have the honour to present the Annual Report of the Inspector of Registry Offices for the year ending December 31st, 1918.

By the amending Act of last session, 8 George V, Cap. 27, several important changes were made in *The Registry Act,* chief among which were the much needed increase in the fees of registration and the abolition of the payment of dual percentages on income. By sections 18 and 23, the scale of percentages that formerly applied to few only of the offices, was made applicable to all, including those in the Provisional Judicial Districts, and the percentages are to be paid on the net income, defined as the earnings (whether received or not) less office disbursements.

The result, as shown by the annual statistical returns, has been an increase, not only in the remuneration of the Registrars, but, as was anticipated, an increase also in the amounts paid in rebates to the municipalities.

Details of the business transacted in each office during the year are shown in the tabulated statements appended as Schedules "A" and "B" to this report, while Schedule "C" contains particulars of the earnings, disbursements and net income of each registrar and the amount payable by each under section 101.

Among other important changes may be mentioned the following:

1. Wills may now be registered by the deposit of the original letters, or the exemplification or certified copy thereof—sec. 6, amending clause (*b*) of sec. 56 (1).

2. Double registration of wills is abolished. All wills must now be copied in the General Register and indexed, and where lands are described in the will, particulars are to be entered in the Abstract Index—sec. 7, adding subsec. 5 to sec. 56.

3. Provision is made for the registration of a Certificate, when seizure of a mortgage by a sheriff, bailiff or other officer, has been withdrawn, vacated or set aside—sec. 9, adding subsec. 7, to sec. 68.

4. By-laws *closing,* as well as those opening, streets, roads and highways must now be registered—sec. 10, amending sec. 70 (1).

5. Plans must now be drawn upon linen—sec. 11, amending sec. 81 (7).

6. The recommendations contained in paragraphs 4, 5 and 6 at page 6 of the report of the Inspector of Registry Offices for the year 1913, would seem to have been carried out by the enactment of sec. 8, amending sec. 62.

7. Amendments are also made to sections 26 and 81, and a new section is substituted for section 106.

Notwithstanding section 103 (as enacted by sec. 18 of the said amending Statute) and my circular letter to the Registrars (reproduced at page 40 of this report), a number of the Registrars have failed to submit for approval the increases in salaries and other payments made by them to their Deputies and Clerks.

The work of the Registrars I found to be generally well performed. The copying, comparing and signing were, however, in some offices too far in arrear, and steps have been taken to catch up with the work.

In four offices the certificate (Form 2) required by sec. 25 had not been inserted in the books, and this notwithstanding the fact that attention had been drawn to it in my report for last year. This certificate must be inserted not only in the Registers, but also in the Abstract and Alphabetical Indexes, and in the Receiving and Fee Books.

In five offices the Statutory Declarations required by sec. 52, subsec. 3, were not made in the completed registers, and in one office the same had not been signed by the deponent.

In one instance money by-laws were being copied in the Township Registers instead of in the special book kept for this purpose.

When a will describing lands is registered it is to be copied once only, that is, as above stated, in the General Registry Book only, and besides being entered in the Receiving and Fee Books, it must be indexed in the Alphabetical Index to the General Register, and also in the Alphabetical Index of the Township in which the lands are situate, and particulars must be entered in the Abstract Index to the lands. In entering the will in the Abstract Index the G. R. number is the proper number to insert. In some offices I found that such wills had not been noted in the Alphabetical Indexes.

When a will is registered under clause (*a*) to sec. 56 (1), by the production of the original will, an affidavit verifying the copy deposited should accompany it, and also an affidavit of execution sworn by one of the witnesses to the will. In one instance the affidavit verifying was missing. These affidavits and the certificate mentioned in subsection 4 are usually attached to the copy of will deposited.

In two offices the particulars of mortgages required by 6 George V, Cap. 24, sec. 20, were not given in the Registry Books.

The method of heating in some of the offices is old fashioned and inadequate. Stoves should no longer be permitted, and wood fittings should be removed and replaced, if not immediately, at all events gradually, by improved metal fittings.

A greater number of references than formerly were made for my opinion or decision during the year, some of which were quite unnecessary, as they had been dealt with in former reports. In this connection it is to be observed that it is only with regard to fees that my opinons have the force of a decision (see sec. 96). In the Appendix I have included notes of such of the opinions, decisions and instructions given, as would seem to be of interest.

The amount received pursuant to subsec. 5 of sec. 10 of The Statute Law Amendment Act, 1918, 8 George V, Cap. 20, from the Master of Titles and the Registrars of Toronto during the year was $13,857.96.

At the request of the Honourable the Provincial Treasurer I furnished a certified list of the Registrars of Deeds, and the amount of security which each should furnish under section 11 of *The Registry Act*, and the Order-in-Council passed thereunder. Except in the cases mentioned in subsection 2 of that section the amount was arrived at by computing the average gross fees for the three previous years.

I have the honour to be, Sir,

Your obedient servant,

JAS. W. MALLON,
Inspector.

Osgoode Hall, Toronto, March 17th, 1919.

DECISIONS, OPINIONS AND DIRECTIONS GIVEN BY JAMES W. MALLON.

SECTION 62 OF THE REGISTRY ACT AS AMENDED BY 8 GEORGE V, CAP. 27, SEC. 8. EFFECT OF REINSERTION OF THE WORDS "OR BY SUCH OTHER PERSON AS MAY BE ENTITLED BY LAW TO RECEIVE THE MONEY AND TO DISCHARGE THE MORTGAGE."

THE LEGAL PERSONAL REPRESENTATIVE OF A DECREASED MORTGAGEE, NOT THE HEIRS AT LAW, SHOULD EXECUTE A STATUTORY CERTIFICATE OF DISCHARGE.

THE SURVIVOR OF TWO MORTGAGEES, WHO HELD IN SHARES AND NOT AS JOINT MORTGAGEES, MAY NOT ALONE EXECUTE A VALID CERTIFICATE OF DISCHARGE OF MORTGAGE. THE LEGAL PERSONAL REPRESENTATIVE OF THE DECEASED MORTGAGEE SHOULD ALSO JOIN.

To a Registrar:

Your letter requesting my opinion is as follows:

"I am enclosing a draft of a Discharge of Mortgage which I am asked to register.

"The Mortgage was made 22nd April, 1904, by Philip H. to Matilda H. N. and Adelaide A. G. for $3,100.00, payable $2,300.00 to Matilda H. N. and $800.00 to Adelaide A. G. Matilda H. N. paid the $800.00 to Adelaide A. G. as shown by attached receipt. There was no assignment made. Adelaide A. G. has since died having made a will leaving all her estate to her husband, who has since died leaving a will. Neither of these wills has been registered in this office. I understand that both parties died in British Columbia, certainly the husband did. I understand that if the Mortgage had been made to these Mortgagees jointly the survivor could have given a Discharge which I could accept for registration, but this Mortgage was made in shares. Can I accept this Discharge for registration? What effect has the addition of the words 'or by such other person as may be entitled by law to receive the money and to discharge the mortgage' to section 62 of *The Registry Act?* Does it mean that the heirs at law of a Mortgagee may discharge a Mortgage?

"This draft was prepared by Mr. R. C. H., Barrister, and I am submitting it to you with his knowledge."

In reply I beg to observe as follows:

Section 62 of *The Revised Registry Act, 1910,* contained the words "or by such other person as may be entitled by law to receive the money and to discharge the Mortgage," as did the corresponding sections of former Statutes.

These words were omitted, however, by 1 George V, Cap. 17, Section 31, which came into force on March 24th, 1911.

They were re-inserted by the Statute of last session, 8 George V, Cap. 27, Section 8, in order to remove a doubt which their omission created in certain cases, more especially those referred to by Mr. Guthrie at page 6 of the Report of the Inspector of Registry Offices for the year 1913, namely, cases in which the Certificate of Discharge is executed (1) by one only of the several executors of a deceased Mortgagee, and (2) by the survivor, or the legal personal representative of the last survivor, of two or more Mortgagees to whom a Mortgage, given since 1st July, 1886, was made to them *jointly* and not in shares.

The effect of 8 George V, Cap. 27, Section 8, therefore, is to leave no doubt that the law, with regard to the execution of Certificates of Discharge of Mortgage, is the same now as it was prior to the 24th day of March, 1911; although it would appear from the opinions given in his reports since that time, that the late Inspector did not regard the omission of these words as effecting any change in the law. (See Reports of the Inspector of Registry Offices for the year 1913, pages 6, 35, 41 and 45, and for the year 1915, page 29.)

The said words, so re-inserted, have reference to the legal personal representatives (executors and administrators) and the assigns of the Mortgagee, and to some others, such as Trustees, Assignees for the Benefit of Creditors, Committee of a Lunatic, and, no doubt, to others who by law are entitled to receive the Mortgage money and to discharge to Mortgage, for example, those referred to in the said Report of the Inspector of Registry Offices at page 6.

They do not, however, permit of the execution of a Certificate of Discharge by the heirs-at-law. (See Reports of the Inspector of Registry Offices for the years 1912, page 28; 1909, page 38; 1906, page 27; 1896, page 13, and 1895, page 30.)

And in the particular case referred to in your letter, I think, that as the Mortgage was held *not jointly*, but in shares, a Certificate of Discharge of Mortgage executed by the survivor alone is not sufficient. The legal personal representatives of the deceased Mortgagee must also join. (See Report of the Inspector of Registry Offices for the year 1912, page 45; see also Reports for the years 1906 at page 18; 1904, page 5, and 1903, page 13.)

It is, of course, unnecessary to add that my opinion in these matters has not the force of a legal decision.

A MORTGAGE MADE TO TWO OR MORE PERSONS JOINTLY AND NOT IN SHARES MAY BE DISCHARGED BY THE SURVIVOR.

TO COMPLY WITH SECTION 65 OF THE REGISTRY ACT IT IS NOT NECESSARY TO TAKE OUT LETTERS PROBATE TO THE WILL BEFORE REGISTERING IT.

To a Registrar:

By registered post I beg to return herewith the Discharge of Mortgage received with your letter.

I understand the Mortgage sought to be discharged was made by Louisa T., Matilda T. and Annie R. E. as Mortgagees: that it was made since 1st July, 1886; that it contains the following clause: "The amount loaned by Louisa T. and Matilda T. is $1,500.00, and by Annie R. E. the sum of $1,000.00": and that in other respects it is in the ordinary form of a Statutory Mortgage.

The Discharge is executed by Louisa T. and Annie R. E., who are therein described as the surviving Mortgagees, and it contains a recital of the death of Matilda T.

The contention of the Solicitor would seem to be that the $1,500.00 advanced by Louisa T. and Matilda T. was from moneys belonging to them on a joint account. If this be so, then following the ruling of the late Mr. Guthrie at page 35 of his Report for the year 1913, and his opinion expressed in paragraph (*b*) at page 6 of the said Report, I think you may accept this Discharge for registration, especially in view of the recent amendment made to Section 62 of *The Registry Act*. (See 8 Geo. V, Cap. 27, Sec. 8.)

From the correspondence, I gather that Matilda T. made a will in favour of her sister Louisa T., whom she appointed sole Executrix, but that the parties do not desire to go to the expense of having the will probated. As to this I may say that in order to comply with Section 65 of *The Registry Act*, an unprobated will may be registered pursuant to Section 56, Subsection (*a*) of *The Registry Act*, a course I would recommend in the present case if there be any doubt that the Misses T. were not joint Mortgagees.

Registrar may accept for registration a Discharge of Mortgage executed by the executor of an unprobated will that has been registered under Section 56 of The Registry Act.

To a Registrar:

Replying to your letter, I may say that a Registrar of Deeds may accept for registration Certificates of Discharge of Mortgage executed by Executor or Executors of a Will which has been duly registered in a Registry Office in compliance with Section 56 of *The Registry Act*, but which has not been admitted to Probate. See reports of the Inspector of Registry Offices for the year 1904, page 12, and for the year 1908, page 27. See also the judgment of Middleton, J., in re Green v. Flatt reported in 29 O.L.R., at page 103, and in 4 O.W.N., at page 1388.

This question does not appear to have been raised in the case referred to by the solicitor, that of Taylor v. Martin, decided by Anglin, J., and reported in 14 O.L.R., page 132.

Annexation of a Town to a City. Books to be opened for, and entries to be made of, instruments affecting the territory annexed.

Instruments should be given a City number and copied into the City Registry Books.

Double registration of instruments affecting a lot that lies partly in the Town and partly in the County.

To a Registrar:

Referring to your letter of the 11th. in which you ask to be instructed as to the entries to be made in the various books of instruments affecting the territory formerly the Town of Steel, and recently annexed to the City of S., and with reference to which you state that the dividing line between Steel and the Township of K. runs across the Dave B. Sub-division on an angle, so that a small portion of some of the lots are situate in the City, the larger portions thereof being in the Township, I have to say as follows:—

It seems to me that in view of Sections 23 (1), 31 and 32 of *The Registry Act* that an Abstract Index, a Registry Book and an Alphabetical Index should have been opened for Steel at the time of its incorporation. However, as this was not done, and now that Steel has been added to the city the more convenient way will be to open a new separate Abstract Index entitled "City of S., Steel addition," or to that effect. A page or part of a page should be reserved in this Index for every lot on every plan affecting Steel with suitable heading and a reference made to the old Abstract Index, which Index should also contain a reference to the new Index.

The instruments affecting Steel, registered since annexation, should be given city numbers and should be copied in their proper order in the city Registry Books.

As to the lots which are partly in the Township of K. and partly in Steel, an instrument covering such lots will require double registration, that is, it will be given a city number as well as a K. Township number, and should be entered in the Abstract Index for the Township as well as in the new Abstract Index for the Steel addition.

Where only a part of a lot is within the portion added to the city the fact should be shown in the new Abstract Index; that is, a heading should be given to the page in the new Abstract Index, somewhat as follows:—"Part of lot—, in the Township of K., formerly the Town of Steel, now in the city of S.," or to the like effect. I think that before instruments affecting such lots are registered they should contain proper descriptions in order that Section 34 of *The Registry Act* may be compiled with, so that where a lot is partly in the city and partly outside such fact should be stated in the instrument.

ORDER OF THE ONTARIO RAILWAY AND MUNICIPAL BOARD ANNEXING TO A TOWN A PORTION OF AN ADJACENT TOWNSHIP COMPRISING 3 TOWNSHIP LOTS, 3 WATER LOTS, AND 4 SUBDIVISION PLANS, MUST BE REGISTERED—METHOD OF REGISTERING—FEES CHARGEABLE, AND BY WHOM PAYABLE.

To a Registrar:

By registered post I am returning herewith Order of *The Ontario Railway and Municipal Board* and the solicitor's letter.

This order annexes to the Town of P. C. certain territory from the adjoining Township of H., and this territory, you say, embraces three Township lots, three water lots, a closed road allowance, as well as four subdivision plans. I have carefully considered the Reports of the Inspector to which you referred me. I find also upon enquiry that there has been some lack of uniformity among the different Registry Offices in dealing with the instruments mentioned in Section 70 (3) of *The Registry Act*, but I am of opinion as follows:—

1. This order must be registered by the Municipality procuring the same by the deposit of a *copy* thereof certified by the Secretary of the Board. See Section 70, Subsection 3, of *The Registry Act*. The enclosed appears to be the original order signed by the Chairman of the Board.

2. The order should be copied in the Registry Book for the Township of H., and entries thereof made in the Abstract Index Books against the Township lots, the water lots, the road allowance and the lots on the four Subdivision Plans. It should be so copied and entered because it is the last registration against the lands to be severed from the Township and annexed to the Town.

3. The order need not be copied in the Town Registry Book, nor entered as the first instrument against the various lots in the Abstract Index to be opened for this "Town Annex," in which latter book you will, of course, assign pages for each of the Township and water lots, the road allowance, and each lot on the four Subdivision Plans.

4. The usual fees as for an instrument affecting lands are chargeable, and I think, payable by the Municipality that procured and are seeking registration of the order, in this case the Town.

5. The new Abstract Index Book will, of course, be furnished by the County Treasurer pursuant to Section 23.

Accompanying this order, I understand, there will be a blue print plan showing the various lots, and subdivision plans affected. Such a plan may, of course, be considered a part of the description. Where, however, orders do not contain a description as sufficient as required by *The Registry Act* a Declaration under Section 34 may be attached. Such declaration may be made by an officer of the Municipality.

A By-law passed pursuant to Section 472 of The Municipal Act before registration must comply with the provisions of Section 34 and Section 70, Subsection 1, of The Registry Act. It may be registered although the approval of the Lieutenant-Governor in Council required by Subsection 3 of said Section 472 is not annexed to the by-law.

To a Registrar:

I have your letter. As I understand the matter you have been tendered for registration a By-law which purports to close part of a highway, and to open in lieu thereof a road across private property; that you have refused registration because, firstly, in addition to being a By-law it purports to be a conveyance to the owners of the private property of the portion of the highway stopped up, and secondly, because there is no evidence of an Order-in-Council having been passed pursuant to Section 472, Subsection 3, of *The Municipal Act*.

You have not sent me the By-law, but, it would seem that if the provisions of Section 34 of *The Registry Act* are complied with, and the copy tendered is a certified copy, as required by Section 70, Subsection 1, of *The Registry Act*, that it may be accepted for registration.

Are you quite sure that this by-law purports also to be a conveyance, and that it does not merely authorize a sale and conveyance by the Municipality of the highway closed. The usual procedure in the case of By-laws under clause (*c*) of Section 472 (1) of *The Municipal Act* is to have the By-law provide for the stopping up of the highway and the sale of the portion so stopped up. Then in a separate instrument the Municipality conveys the same to the parties as provided for in the By-law. If you are sure it is a conveyance as well as a By-law, I would suggest that you give the parties an opportunity to change it if they so desire, but it seems to me that you are not concerned with the validity of the instrument so long as the provisions of *The Registry Act* have been complied with.

Subsection 3 of Section 472 of *The Municipal Act* requires the approval of the Lieutenant-Governor in Council in certain cases to By-laws before they may be effective. It does not state that the By-law may not be registered without the said approval being annexed or given, and it therefore seems to me that a Registrar may assume *omnia rite esse facta*. The necessary approval would seem in this case to be outside the By-law. However, if you know as a fact that such approval has not been obtained, I think, as a matter of courtesy, you would be right in bringing the matter to the attention of the party who desires registration in order to give him an opportunity of obtaining the necessary consent.

The By-law in question must not, of course, be confused with money By-laws, the registration of which is provided for under Subsection 4 of said Section 70. The By-law in question you will register on obtaining the certified copy in the same manner as you would register any instrument affecting lands. See Section 2, Clause (*d*) of *The Registry Act*.

ENTRIES TO BE MADE IN THE ABSTRACT INDEX OF CONVEYANCES WHEN PORTIONS OF A STREET ARE CLOSED—BY-LAW CLOSING NOT REGISTERED—SUGGESTIONS.

To a Registrar:

With reference to your question as to the entries to be made in connection with the portions of the streets closed I beg to refer you to page 10 of my Report for the year 1917. The proper practice, I think, will be to open a page in the Abstract Index for the whole of the street known as Queen Street, on which page you will enter the instruments affecting the portions closed, and any other instruments you will hereafter receive closing or otherwise dealing with the streets in question.

I note that you state the By-law closing the streets has not been registered but that conveyances thereunder of the closed portions were registered. It would be well to inform the parties of this in order to enable them, if they think it necessary for the protection of their title, to have the By-law registered, as now required by Section 70 (1) as amended by the statute of last session and which came into force March 26th, 1918.

"ROAD ALLOWANCES"—REGISTRATION OF BY-LAWS CLOSING—SEPARATE ACCOUNT SHOULD BE OPENED IN ABSTRACT INDEX.

From a Registrar:

You doubtless have forgotten the ruling you gave me in 1917 as to furnishing Abstracts of Closed Road Allowances and opening up pages in the Abstract Index of the Township of H. for the highway. The ruling appears on page 11 of your 1917 report.

That ruling quite changed our method of dealing with instruments conveying roads, which from time immemorial had merely been indexed on the lots abutting on the roads in question.

It is due you to say that the new method is working out well in practice. When a part of an original allowance is closed, it really becomes a separate lot by itself, and should have its own place in the Abstract Index.

A subsequent suggestion by you, that in registering Subdivision plans, we should open up a title in Abstract Index for the "Streets, Lanes, etc.," in the plan, works out equally well and provides a record which we have always needed.

It seems to me singular that long ago a clause was not added to Section 31 explicitly directing registrars to open such abstracts, and relieve you from making rulings in the matter.

Strictly speaking, Section 31 only requires us to open up two kinds of abstracts, *lots of land* patented by the Crown, and *lots in Sub.* plans. It should also deal specifically with water lots.

But to come to my difficulty. In opening up the new lots required by your ruling, I gave to each the title "Closed Road Allowance between ————." Now this word *closed* in the title restricts the record to conveyances of roads which have been closed to the knowledge of the registrar.

But it is quite the exception for Deeds which convey Road Allowances or parts of same to indicate that the road has been duly closed by process of law. To

show this I have turned up and listed on a separate sheet some recent deeds in which Road Allowances were conveyed, giving the wording verbatim as to the road. In not one of them is it stated that a by-law closing the road had been passed, let alone been registered.

If the heading were "Road Allowances" only, they could all be entered there, but surely deeds of roads which have not actually been closed should not be placed under "Closed Road Allowances."

On the other hand, it is risky to do nothing with the class of deeds I have listed, as the by-laws closing them may possibly be registered and indexed somewhere under the crude methods which formerly were followed here.

I never noticed till to-night that the words "Closed Road Allowance" in your ruling are not really yours. These words are Mr. Guthrie's. You, in the last paragraph told me to open up pages "*for the highway, a portion of which was closed.*" This heading would be broad enough to take any deed.

If we want a clear-cut rule to follow in all cases, we might treat roads as we do water lots, which latter we do not recognize until the patent comes or an official notice that it has been issued. I presume the by-law closing the road would be equivalent to the notice from Crown of issue of patent, and that a deed from the proper Council would correspond to the Crown Grant. Is this reasoning faulty?

I would be inclined to construe a deed from a Council, which did *not* recite that road had been closed, as sufficient indication that road had been duly closed, and therefore eligible for registration. Would you?

Now, if I may make the heading "Road Allowances," my difficulty vanishes. But if it be "Closed Road Allowances," then what am I to do with the class of conveyances I have described?

Letter in reply:

I have your letter of the 27th ultimo.

These road allowances were originally set apart by the Crown for the benefit of the public, and Section 433 of the *Municipal Act* provides that unless otherwise expressly provided they shall be vested in the corporation of the Municipality, the Council of which for the time being has jurisdiction over them, and Section 472, Subsection 1, Clause (*c*) makes provision for their closing and for the lease or sale thereof.

I do not think the Registrar would be justified in refusing to register a deed from the proper Municipal Council simply because the by-law passed pursuant to Section 472 (3) of the *Municipal Act* had not been registered. The Registrar, however, should draw the attention of the parties desiring registration, to the fact that the by-laws have not been registered and that Section 70, Subsection 1 of the *Registry Act,* as amended by 8 George V, Cap. 27, Section 10, now requires the by-law to be registered or the same shall not become effective in law.

I think it quite proper and by far the more convenient practice to have a separate account in the Abstract Index for each road allowance, for the entry of all instruments affecting the same or any part thereof.

Section 31 does not say that a highway, street, road, lane, etc., shall *not* be entered in the Abstract under a separate and distinct heading.

REGISTRATION OF INDENTURE GIVING A TELEPHONE COMPANY THE RIGHT TO CONSTRUCT, OPERATE AND MAINTAIN, ETC., ITS LINES UPON, OVER, UNDER AND ACROSS LANDS. SUFFICIENCY OF THE DESCRIPTION. SEC. 34 COMPLIED WITH IF PROPER DESCRIPTION GIVEN OF THE SERVIENT TENEMENT AND OF THE NATURE OF THE EASEMENT TO WHICH IT IS MADE SUBJECT.

To a Registrar:

Herewith I beg to return Indentures as follows:

First, Indenture wherein Margery A. K. and Oril V. K. "grant unto the Bell Telephone Company of Canada, its successors and assigns forever, the right, privilege and authority to construct, operate and maintain its lines of telephone, including wires and fixtures, with the right to permit the attachment thereon of the wires of any other Company, and the right to trim and cut down trees that may interfere with the said lines, and the right to erect and set the necessary guy and brace poles and anchors and attach thereto and to trees the necessary guy wires upon, over, under and across" part of the West half of Lot 24 in the first concession, Township of O., County of S.

Second, A similar grant made by John A. B. and Emma Isabell B. to the said Company "upon, over, under and across Lot 22, 1st Concession, Township of O., County of S."

As to the second grant, namely, that to the B.'s, I think the description sufficient for the purposes of registration; but as to the grant to Margery A. and Oril V. K., the particular part of the West half of Lot 24, will have to be more clearly defined, before you may accept the instrument for registration.

In his Report for the year 1911, at page 21, Mr. Guthrie said: "In cases of grants of easements I think it must be deemed to be a sufficient compliance with Section 34 to describe the lands over or upon which the easements exist or which they may affect, and the nature of the easements. The object of the *Registry Act* is to provide for notice of, amongst other things, burdens affecting lands: and such object may be deemed to be sufficiently accomplished by giving a description of the servient tenement and a description of the nature of the easement to which it is made subject."

I would also refer you to page 26 of the Inspector's Report for the year 1908 where registration was permitted of a Mortgage upon the pole lines of a Telephone Company "which are now or which may be at any time hereafter during the continuance of the Mortgage situate standing, lying or being upon the public highways"—the highways being described in the Mortgage.

CERTIFICATE OF AN ORDER SUBSTITUTING A TRUST COMPANY FOR THE EXECUTORS NAMED IN A WILL MAY NOT BE RECORDED IN THE GENERAL REGISTER.

To a Registrar:

I have your letter of the 24th inst., enclosing a copy of a certificate of Judge's order substituting a Trust Company for the executors named in a Will, which Will has been recorded in the General Register only. This certificate is not one of the documents that may now be recorded in the General Register, and in order that it may be registered I would suggest that a Statutory Declaration pursuant to Section 34 of the *Registry Act* be attached thereto.

RAILWAY PLANS—FEES FOR DEPOSITING. PROCEDURE. NEED NOT BE ENTERED IN THE ABSTRACT INDEX.

To a Deputy-Registrar:

By registered post I am returning under separate cover the blue print plan and the Solicitor's letter received with your favour of the 6th inst.

Such plans are deposited in the office of the Registrar of Deeds under the *Dominion Railway Act,* and the fees to be charged are those provided for by that Statute. See Sections 160, 163 and 377 of the Revised Statutes of Canada, Cap. 37. I am not aware that these Sections have been amended, but I would suggest that you look through your Statutes and ascertain this for yourself. Upon the receipt of your letter I called up the C.P.R. solicitor who sent this plan to you for deposit. He states that he does not desire a certificate that the blue print is a copy of the original plan, that what he wants is the usual certificate of registration setting out the hour, minute, day, etc., of registration, and he states that the fees which are usually paid by the Company for depositing such a plan are about $2.00, which would seem to me to be reasonable.

I am advised by the Registrar of the Eastern Division of the City of Toronto that the fees charged in that office for like services amount to $1.50 only.

As to the procedure in the Registry Offices on the receipt of these Railway plans and the fees to be charged therefor, I may refer you to the following Reports of the Inspector of Registry Offices:—1897 page 48, 1902 page 8, 1906 page 4 clause 12, and 1906 page 7, all of which are prior to the Revised Statutes of Canada, 1906, but, I think the majority have a bearing upon this question.

The main thing to be observed is this; that these plans do not come within the provisions of the *Registry Act,* and therefore need not be entered in the Abstract Indexes. See Report for 1906, page 4, clause 12.

DEED THOUGH DATED PRIOR TO DATE OF REGISTRATION OF PLAN MAY BE REGISTERED AND ENTERED ON THE ABSTACT INDEX FOR THE PLAN WHERE SAME REFERS TO THE PLAN AND THE LOTS DEFINED THEREON, IF SAID DEED WAS EXECUTED AND THE AFFIDAVIT OF EXECUTION SWORN ON A DATE SUBSEQUENT TO THE DATE OF REGISTRATION OF PLAN.

To a Deputy Registrar:

I beg to return by registered post the Deeds and Mortgage received with your letter of the 21st ultimo.

As the descriptions refer to the new plan and to the lot as defined thereon, and as the Deeds were executed and the affidavits of execution were sworn to on a date subsequent to the date when the new plan was registered, I think you may accept them for registration and enter them upon the Abstract Index for the new plan, even though the Deeds are dated prior to the date of registration of the plan. Subsection 11, of Section, 81 of the *Registry Act* applies to instruments "executed after the plan has been registered." See Report of the Inspector of Registry Offices for the year 1905, pages 12 and 13. See also Section 31 of the *Registry Act.*

With reference to the alterations made in the description and which have not been initialed by the subscribing witness, it seems to me that the substitution of the word "registered" for the word "fyled" and the insertion of the registered number of the plan, do not, in any way, alter the meaning, there being a sufficient reference to the plan without these changes. It would be well, however, if possible, to have the subscribing witness put his initials in the margin; but, if this is not convenient, and the Solicitor insists upon registration, I think that as the meaning has not been in any way affected, that you would not be justified in refusing to register these documents merely because of the absence of initials.

DESCRIPTION FOUND TO BE DEFECTIVE AFTER INSTRUMENT REGISTERED.—SUGGESTIONS.

To a Deputy Registrar:

I have your letter of the 29th ult., and I note that a conveyance has been registered in your office containing a faulty description.

As I understand it, the document was received by the Registrar and before the same was abstracted the duplicate with a certificate of registration thereon was returned to the conveyancer, that when you came to abstract it you found that the parcel as described purports to be a portion of lot number one in the Township of K., that there is no lot 1 in that Township, and that it is your opinion that it is a part of lot 4 in the 4th concession of the said Township that was intended to be conveyed, but that even if this be so the description would still be imperfect, and you are at a loss to know how to enter this instrument in the Abstract Index.

If instructions had been carefully carried out this difficulty would not have arisen. It is very important that instruments be abstracted, if not upon the day when they are received, at all events upon the morning of the following day, and duplicates bearing the certificate of registration ought not to be handed out until the instruments are entered in the proper Abstract Index books.

I would suggest, in order to overcome the difficulty, that a deed of confirmation be obtained and registered. When this has been done you ought not to have any difficulty in abstracting the conveyance referred to, which conveyance, together with the faulty description should be recited in the said deed of confirmation.

DESCRIPTION—TRAVELLED ROAD—RIGHTS OF WAY—DISTINCTION BETWEEN AN EXISTING WAY AND MERE RIGHTS OF WAY.

To a Deputy Registrar:

Mr. R. H. C., Commissioner for the Canada Company, has written to me with reference to the following description in a conveyance submitted to you for registration, namely, "The South half of Lot No. 16, except the travelled road through the said land, in the 10th Concession of the said Township of D.; and has sub-

mitted to me your letter in which you return the deed and refer to my opinion as set out at page 17 of my Report for the year 1917.

Mr. C. in his letter states that it is a travelled road, that there is every indication that it is a recognized public highway, that it seems to be an outlet for the parties who live to the east of Lot 16, and is said to have had Township moneys spent upon it. This being so, it seems to me that a surveyor going upon the ground could, from the above description, trace and ascertain the lands intended to be conveyed without having to make a search or inquiry in the Registry Office or elsewhere.

In the case referred to in my Report for the year 1917 there was nothing upon the ground to indicate the lands over which rights of way were given, and therefore it had to be definitely defined, otherwise it could not have been located by a surveyor.

Here, as in the cases mentioned by the late Inspector in his Report for the year 1911, page 26, there is an existing way.

I have, however, asked Mr. Coleman to amend the description by inserting after the words "travelled road" the words "running in an easterly direction from the road allowance between the 9th and 10th Concessions," which he is willing to do. When this alteration has been made in the description I think you may accept the conveyance for registration.

DESCRIPTION REQUIRED BY THE REGISTRY ACT NEED NOT NECESSARILY BE ONE DRAWN BY A SURVEYOR.

To a Barrister:

I have your letter and beg to return herewith by registered post the deed S. to T.

What *The Registry Act* requires is a description from which a surveyor going upon the ground can trace the lands intended to be conveyed without the necessity of his having to make a search in the Registry Office or elsewhere.

As the parties are not desirous of going to the expense of a Survey, could you not take the descriptions as set out in the various conveyances already registered on the lot in question, and having blocked them out on a sketch, draft a description of the remaining parcel, that is now to be conveyed. In other words, could you not draft a description by metes and bounds that will meet the requirements of *The Registry Act?* It need not necessarily be a surveyor's description.

DESCRIPTION INSUFFICIENT. WHAT THE ACT REQUIRES.

Herewith I beg to return the Mortgage. It contains the following description: "Being composed of and being more particularly known and described as the *North portion* of the East part of Lot Letter "C" in the Fourth Concession of the said township of C., containing by admeasurement Fifty acres of land be the same more or less."

What *The Registry Act* requires is a description from which a surveyor going upon the ground can locate the lands without inquiry in the Registry Office or elsewhere.

The North portion of the East part of Lot "C" should be more clearly defined.

DESCRIPTION BY REFERENCE TO AN INSTRUMENT ALREADY REGISTERED.

I. To a Solicitor:

Herewith I beg to return the Mortgage received with your letter and which contains the following description as to the sufficiency of which you ask my opinion: "In the Township of G. in the County of L., and being composed of those parts of Lot number Twenty-six in the First Concession of the said Township of G. described in deed from Agnes Lita J., Administratrix of the estate of Charles William J., to Frederick A. C. and Olive F. C., dated January 26th, 1915, registered in Book 18 for the said Township as No. 9005; subject to the right of way in the said deed contained."

If the deed referred to registered as 9005 contains a description of the lands sufficient to met the requirements of the *Registry Act,* then, I think, the description in the deed enclosed will be sufficient. See my Report for the year 1916, page 14.

II. To a Registrar:

I have your letter enclosing copy of the description contained in Mortgage No. 114460, Patrick L. *et ux.* to the Canada Trust Company. As the description in this Mortgage complies with *The Registry Act* in that it contains a reference to the plan I think you may accept for registration the Renewal Agreement in question which contains a recital referring to this Mortgage by date and registered number and which recital continues as follows:—"and which said Mortgage covers part of Lots numbers 15, 16 and 14 on the South side of York Street and part of Lot number 16 on the North side of George Street more particularly set out and described in the above mentioned Mortgage." In view of the decisions of the Inspector as to descriptions by reference to instruments already registered I think you may upon the whole accept this Renewal Agreement for registration, although I agree with you that I should have preferred to have had the said recital include the words that refer to the registered plan.

CAUTION—REGISTRATION OF A CAUTION UNDER SECTION 13 OF THE DEVOLUTION OF ESTATES ACT IN WHICH NO LANDS ARE MENTIONED.

To a Registrar:

In your letter you state that a solicitor has presented for registration a Caution under Section 13 of *The Devolution of Estates Act,* R.S.O., Cap. 119, which Caution does not specifically describe any lands, and the Solicitor thinks there is a possible doubt about the interpretation of Form 1 to said Section 13, and wishes my view of the matter.

The Section of *The Devolution of Estates Act* must, of course, be read along with the provisions of *The Registry Act.* The only instruments that may now be registered in the General Register are those referred to in Section 23, Subsection 8, and, therefore, before you may accept the Caution it will be necessary to have attached to it a Statutory Declaration under Section 34 of *The Registry Act.*

SEAL OF A CORPORATION—NO PARTICULAR FORM OF SEAL PRESCRIBED.

To a Registrar:

In your letter of the 9th inst., you state that the Mortgage tendered for registration bears a large red seal with the name of the school section printed on it and you state, "We want to know if an impress by a stamp or a red seal with name printed on it is a corporate seal or must the seal be such as will make an impress in the paper?"

Section 42 of *The Registry Act* provides that the "seal of a corporation" when affixed to an instrument with the signature of the Secretary, Manager, or Attorney or Presiding Officer thereof, shall be sufficient evidence for the purpose of registration, of the due execution of the instrument by the corporation; and Section 35 requires an affidavit of execution in the case of documents other than certain instruments therein defined, and other than those "under the seal of any corporation." I have not been able to find any provision whereby a particular form of corporate seal is required, and I do not think you should take the responsibility of rejecting an instrument which purports to be, and apparently is, sealed with the seal of the corporation.

FEES FOR DEEDS UNDER SECTION 302 OF THE ONTARIO RAILWAY ACT ARE THE SAME AS FOR INSTRUMENTS UNDER THE REGISTRY ACT, BUT FOR DEEDS TO THE T. H. & B. RAILWAY COMPANY THE FEES ARE THOSE MENTIONED IN ITS ACT OF INCORPORATION.

To a Registrar:

Replying to your letter of the 10th inst., I may say that while under Section 302 of *The Ontario Railway Act*, R.S.O., Cap. 185, as amended by 8 George V, Cap. 30, Sec. 5, the fees for the conveyances therein mentioned are the same as those for similar instruments registered under *The Registry Act*, yet in the case of conveyances to the Toronto, Hamilton & Buffalo Railway Company, the fees chargeable will be those mentioned under Section 9 of Cap. 75, Ontario Statutes, 1884, the act incorporating the said Company.

FEES FOR DEPOSIT OF A PRELIMINARY ROUTE PLAN UNDER SECTION 5, SUBSECTION 3, OF THE PROVINCIAL HIGHWAY ACT.

To a Registrar:

Herewith I beg to return the letter of Mr. W. A. McLean, Deputy Minister of the Department of Public Highways, and other documents received with your letter of the 27th ult., a reply thereto having been delayed owing to my repeated absence from the city on duty.

With his letter to you Mr. McLean enclosed, pursuant to Section 5, Subsection 3, of *The Provincial Highway Act*, 7 George V, Cap. 16, a preliminary route plan, showing the location of a Highway within the County of Lincoln to be acquired as a Provincial Highway.

The only analogous proceeding to the deposit of a plan under this Statute would seem to be the deposit of plans under the Dominion and Provincial Railway Acts. You will find the procedure and fees applicable in the case of railway plans set out in the Inspector's Reports for the year 1902 at page 8, and 1906 at page 7.

Mr. Cockburn, of the Department of Public Highways, informs me that all that is required is the deposit of this plan, *not its registration*, that the Department does not ask for Certificates or copies, and that the fee they have been accustomed to pay to Registrars is $1.00.

By Section 93 of *The Registry Act* it is provided that where an Act of Ontario or of the Dominion requires an Instrument to be deposited or registered but omits to provide fees therefor and no fees are provided by *The Registry Act* or any other Act the Registrar shall be entitled to such reasonable fee as the Inspector shall fix. As the question has not been raised as to whether this provision would be held to apply to the Crown and in view of the fact that the Department is willing to pay $1.00, the fee that has been accepted by other Registrars in similar cases, I am inclined to rule that the said fee is reasonable.

FEES FOR REGISTRATION OF A WILL CONTAINING 15 FOLIOS AND AFFECTING 12 LOTS OR PARCELS.

To a Registrar:

I have your letter of the 7th May, 1918, in which you refer to my circular letter of April 11th as to the registration of wills, and you desire my views as to the proper fees to charge for the registration of a Probate of a Will containing 15 folios covering a parcel of land in the Township of H., and 11 lots in the Town of P.

The fees will be computed as follows:—

$2.00 for the first 700 words.
1.05 for the next 700 words.
.10 for the additional 100 words.

$3.15

In addition to this you will also be entitled to 5c. a lot after the first four, that is, 40c. for the additional lots and parcels. The total will therefore be $3.55.

FEES FOR LETTERS NOT PROVIDED.

To a Registrar:

In reply to your letter of the 27th I do not think that under Sections 92 or 93 of *The Registry Act* I may approve of your charging fees for letters written in connection with documents that you have been obliged to return for correction.

TAX ON MORTGAGES—8 George V, Cap. 20, Sec. 70.

To a Deputy Registrar:

I note from your letter of the 2nd inst. that you have had to pay $3.40 extra upon a Mortgage for $3,400.00 registered in the Registry Office at Toronto. As this sum was paid pursuant to a By-law passed by the City of Toronto under Section 70 of *The Statute Law Amendment Act,* 1918, I will not communicate with the Registrar with reference thereto unless you so desire.

TAX ON MORTGAGES—REGISTERED MORTGAGE DISCHARGED WITHOUT MONEY HAVING BEEN ADVANCED THEREON AND NEW MORTGAGE FOR A LARGER AMOUNT REGISTERED—TAX PAYABLE ON BOTH.

From a Solicitor:

In connection with the tax which is imposed on registering mortgages in the city we have come across a case where a mortgage for a large amount was registered and no advance was made on the same. Subsequently within a short time the mortgagors desired to borrow a larger amount and a new mortgage was put on to secure same, the former mortgage being discharged. This is a case where we think that a mortgagor should not have to pay the tax on more than the difference between the first and second mortgages. Mr. Bennett of the Registry Office suggested that we take the matter up with you.

Letter in reply:

I have your letter relative to the tax on Mortgages under Section 70 of *The Statute Law Amendment Act,* 1918.

While it is not for the Inspector to interpret the Statute, still I am quite willing to give you my views of the matter.

This Statute provides for a tax "upon the sum of money secured by each instrument by way of Mortgage or charge, registered in a Registry or Land Titles Office." It would seem, therefor, that the Mortgage you refer to comes within this provision.

TAX ON MORTGAGES IS PAYABLE ON A MORTGAGE OF A MORTGAGE EVEN THOUGH THE HYPOTHECATED MORTGAGE WAS REGISTERED PRIOR TO 8 GEO. V, CAP. 20.

From a Solicitor:

A mortgage being made, say for $35,000.00, and afterwards assigned by way of mortgage, is it necessary to pay another fee on registration of that assignment by way of mortgage, that is, suppose that the mortgage was made since the Act and has already paid the fees for registering? Why should an additional fee have to be paid on the mortgage of the mortgage?

Suppose the mortgage was made before the Act and did not pay fees, would that make any difference as to paying fees on the assignment by way of mortgage?

Would you kindly let me know how that stands in your opinion.

Letter in Reply:

Re Taxation of Mortgages, 8 Geo. V, cap. 20, sec. 70.

Upon my return to the city I have your letter. Where the mortgage already registered has been hypothecated it would seem that under the recent Statute a tax will be payable upon the amount of money being advanced, and this whether the mortgage now being mortgaged was registered before or after the passing of the said Act.

Section 11 of The Planning and Development Act, 1918, does not apply to lots on a subdivision plan that has been approved under that statute.

To a Registrar:

As to your question: "Will the following description of land come under Sec. 14, Cap. 44 of *The Planning and Development Act* of 1917, viz., the westerly 65 feet of Lot 19 on the north side of James Street in the Town of Prescott; the grantor owns Lots 18 and 19. James Street being 60 feet wide, and the plan of the town was fyled in this office in 1885?" I may say that what was formerly Sec. 14 of the *Planning and Development Act* of 1917 is now Sec. 11 of the *Planning and Development Act* of 1918. If lots 18 and 19 are lots defined on a *Subdivision Plan* prepared pursuant to Sec. 81 of the *Registry Act* and *approved* as required by said *Planning and Development Act* I think the consent of the Board will not be necessary, but, I assume from your letter they are Town Lots shown upon a Municipal Plan, probably prepared under Sec. 88, in which case I am inclined to think that it will be necessary to have the consent of the Board. Lots 18 and 19 constitute a "tract of land within a town" "which tract has not been subdivided according to a plan *approved*" within the meaning of the Section, and it is proposed to *sever* 65 feet therefrom, which 65 feet abuts upon a street that is less than 66 feet wide.

The Planning and Development Act, 1918—the exception as to "Plans of Surveys and Subdivisions" in Section 11 refers to plans prepared under Section 81 of The Registry Act and not to Municipal plans prepared under Section 88.

Approval of the Ontario Railway and Municipal Board—when required under Section 11.

To a Registrar:

By registered post I beg to return herewith Agreement for the sale of land received with your letter of the 2nd inst.

It is an agreement for the sale of a parcel of land described by metes and bounds and being a part of an original Township Lot and which parcel so described abuts on a highway less than 66 feet in width.

Your view is that it may not be registered without the approval of The Ontario Railway and Municipal Board, under Section 11 of *The Planning and Development Act*, 8 Geo. V, Cap. 38.

The Solicitor, however, contends that the said Statute is not applicable as the highway was established long before a plan of any part of the Town was registered, and that the land of which the parcel forms a part, was sold before the coming into force of the said Statute.

At the request of the Solicitor you have asked me for an opinion in the matter.

My view is that the exception as to "plans of surveys and subdivisions" in Section 11 refers, not to municipal plans prepared under Section 88 of *The Registry Act,* but to subdivision plans prepared in pursuance of Section 81 of the said Act, and, therefore, under Section 11 of *The Planning and Development Act* the consent of the Board is necessary to the sale of the parcel in question, unless, of course, it occupies a position similar to that referred to in the last paragraph of my report for the year 1917 at page 7, namely, that it is a parcel or tract of land that has been heretofore conveyed under a specific description by metes and bounds, and a conveyance thereof has been heretofore registered, and the present sale is a sale of such parcel or tract "in toto" (not a part of it) by the same description—then, I think, the consent to such a sale would not be necessary because there is no severance of a part of the tract owned by the vendor.

THE PLANNING AND DEVELOPMENT ACT APPLIES ONLY TO LANDS WITHIN CITIES, TOWNS, AND VILLAGES, AND THE URBAN ZONES SURROUNDING THEM.

APPLICATION OF SECTION 11.

To a Deputy Registrar:

I have your letter of the 2nd instant enclosing pencil sketch of a plan. It shows lots lettered C, D, A, B, F, and G, all of which abut upon a 20-foot roadway.

You have not stated just what lots or parts thereof are to be conveyed; but no doubt, you can come to a conclusion without my assistance on referring to opinions reported at pages 7, 8 and 9 of my Report for the year 1917.

The Planning and Development Act applies only to lands within cities, towns and villages and urban zones surrounding them as therein defined. See Section 5. If the owner of a tract which has not been subdivided according to a plan *approved,* should sever and convey a part thereof, which part abuts upon a 20-foot street, then the conveyance would have to be approved as required by Section 11. If, however, a portion fronting on the T. and H. Highway, but not abutting on the 20-foot street, is severed, then such consent, I think, would not be necessary.

PLANS APPROVED BY A TOWN PLANNING COMMISSION AND THE ONTARIO RAILWAY AND MUNICIPAL BOARD DO NOT REQUIRE THE FURTHER APPROVAL OF THE MUNICIPAL COUNCIL.

Subsection 14 of Section 81 of *The Registry Act,* as enacted by 7 George V, Cap. 30, provides that, "No plan upon which any street, road or highway is laid out shall be registered unless it has been approved by the proper municipal council or councils, and no plan of land abutting upon a highway of less width than 66 feet, or upon which there is laid out a highway of less width than 66 feet

shall be registered unless it has been approved by the proper municipal council or councils, and by The Ontario Railway and Municipal Board."

Subsection 18 of said Section 81 of *The Registry Act*, as enacted by 7 George V, Cap. 30, provides that, "No plan of survey and subdivision to which the provisions of *The Planning and Development Act* apply shall be registered unless approved as required by that Act."

The Planning and Development Act, 8 George V, Cap. 38, Section 6, Subsections 1 and 3, provides that, "No plan of survey and subdivision of land within a city, town or village shall be registered unless it has been approved by the council of such city, town or village, or by the Board," and that "No plan of survey and subdivision of land abutting upon a highway of less width than 66 feet, or upon which there is laid out a street of less width than 66 feet, shall be registered unless it has been approved by the proper municipal council or councils and by the Board;" and Section 7 provides for certain proceedings to be taken in connection with such approval prior to registration of the plan.

Section 13 of the last mentioned Statute provides for the appointment by the council of a city, town or village, of a "Town Planning Commission" and enacts that such a Commission "shall have and exercise all the powers and discharge all the duties, by this Act, vested in and exercisable by the Council of such city, town or village."

The question submitted to me is whether in view of the above enactments the consent of the council of a city, town or village is necessary to a plan already approved of by the "Town Planning Commission" of such city, town or village.

I think not. *The Planning and Development Act* applies only to lands within cities, towns and villages and urban zones, as therein defined, surrounding them. *The Registry Act*, however, is of wider application: and Subsection 14 of Section 81 will apply to lands to which the provisions of *The Planning and Development Act* have no application. In municipalities where there are Town Planning Commissions properly constituted under Section 13, the consent of the Commission will, I think, be sufficient without that of the municipal council of the municipality in the case of lands to which *The Planning and Development Act* applies, namely, lands within cities, towns and villages and the urban zones surrounding them. In cities, towns and villages where there is no Commission, and in the case of lands to which *The Planning and Development Act* does not apply, namely, lands not within cities, towns and villages and urban zones, the approval of the proper municipal council will be necessary. I think the provisions of Section 6 of *The Planning and Development Act* apply as well to all streets, roads and highways as to the lots laid out on the plan.

As to Subsection 8 of Section 81 of *The Registry Act*, I do not see that it has any bearing on the question. That Subsection, as does Subsection 16 of Section 81, applies to the owners and mortgagees of the lands. Subdivision plans must under these subsections be signed by the owners and mortgagees, be they individuals or corporations, who tender them for registration.

I may add that I have discussed this question fully with the Chairman of The Ontario Railway and Municipal Board and he agrees with the views above given.

PRELIMINARY STEPS TO BE TAKEN BEFORE INSPECTOR WILL EXERCISE HIS POWER UNDER SECTION 88, SUBSECTION 1 OF THE REGISTRY ACT TO COMPEL THE PREPARATION AND REGISTRATION OF A PLAN BY A MUNICIPALITY.

To a Registrar:

I have your letter in which you speak of the necessity for the preparation of a plan of the Town of B. pursuant to Section 88 of *The Registry Act*. The steps necessary to be taken before an Inspector will exercise his power to compel a town to cause a plan to be prepared and registered are concisely stated at page 25 of the Report of the Inspector of Registry Offices for the year 1907. Under separate cover I am forwarding to you a copy of this Report.

MUNICIPAL PLAN UNDER SECTION 88 (1) MUST BE A COMPILATION OF REGISTERED PLANS—LOTS MAY NOT BE NUMBERED.

To a Registrar:

Re Plan of Village of F.

I would refer you to an opinion given by the late Inspector of Registry Offices at page 33 of his Report for the year 1907 from which it appears that the plan now sought to be registered, and which seems to have been prepared under Section 88, Subsection 1, must be a compilation of the registered plans, and must not give numbers or other designations to the lots that were unnumbered on these registered plans.

In your letter you state that the village plan has more detail upon it and appears to be an improvement on the registered plans. An improvement in a registered plan can only be made with the consent of the owners, etc., under Section 81 or upon a Judge's order.

Kindly bring the matter to the attention of the parties, who, no doubt, will have the plan amended so as to comply with Section 88, Subsection 1.

MEMORANDUM.

Since the foregoing report was presented the Legislature has amended Subsection 11 of Section 88 of *The Registry Act*, to permit of the numbering or lettering of lots on these Municipal plans. See 9 Geo. V, Cap. 25, Sec. 18.

WILL—DECLARATION UNDER SECTION 34—BY WHOM TO BE MADE WHERE A WILL WITHOUT LOCAL DESCRIPTION HAS BEEN REGISTERED IN THE GENERAL REGISTER, AND THE EXECUTOR IS ABSENT FROM ONTARIO.

To a Solicitor:

The question submitted for my opinion is as follows: "A makes a Will appointing B his executor, and C is one of his devisees to land without local description. The probated Will has been registered in the General Register, and

C, as one of the several beneficiaries, makes a declaration under Section 34, Subsection 3 of *The Registry Act*. B, the executor, is absent in British Columbia.

The Registrar's contention is that the declaration must be made by one of the parties to the instrument "or the heirs, executors or administrators of such party," that in the case of a Will the only party to the instrument is the testator, and that therefore the declaration must be made by all of his heirs, or by his executor or administrator. Your view is that this beneficiary, being a party interested in the registration, his declaration should be accepted, that the bracketed words "as the case may be" in Form 15 to *The Registry Act* makes this clear, and you state that the executor is absent in British Columbia.

On a strict interpretation of Subsection 1 the Registrar's view would seem to be the correct one. The words "or as the case may be," which appear in brackets in Form 15, evidently refer to an officer of a corporation, or to the Solicitor of a party who is absent from Ontario—see Subsection 5: I would, therefore, recommend in order that the matter may be free from all doubt, that a Statutory Declaration be made by the Solicitor of the absent executor pursuant to Subsection 5.

WILL WITHOUT LOCAL DESCRIPTION HAVING ATTACHED A DECLARATION UNDER SECTION 34, SUBSECTION 1—HOW REGISTERED.

WHERE A WILL WITHOUT LOCAL DESCRIPTION HAS BEEN REGISTERED—HOW TO REGISTER THE DECLARATION UNDER SECTION 34 (3).

To a Deputy Registrar:

Replying to your letter of the 3rd inst., received on my return to the city I may say that reading Subsection 5 of Section 56 (as enacted by Section 7 of *The Registry Act*, 1918) with Subsection 1 of Section 34 it seems to me, as the Will must now be recorded in the General Register, that in a case where you receive a Will without local description having annexed to it a Statutory Declaration pursuant to Section 34, Subsection 1, that it will be necessary to record the Will and the affidavit in the General Register only, and to enter in the Abstract Index of the lands particulars of the registration.

Where, however, a Will has already been registered pursuant to said Subsection 5, and a Statutory Declaration is afterwards tendered for registration under Section 34, Subsection 3, the declaration, not the Will, is to be recorded in a separate Registry Book, and particulars thereof entered in the Abstract and Alphabetical Indexes. See Report for 1914, page 22.

WILL—INSTRUCTIONS FOR THE REGISTRATION OF WILLS ISSUED TO ALL OF THE REGISTRARS.

Office of the Inspector of Legal and Registry Offices, Osgoode Hall.

TORONTO, April 11th, 1918.

DEAR SIRS,—Having had several inquiries as to the effect of the recent amendment to Section 56 of *The Registry Act*, namely, the addition of Subsection

5 by Section 7 of 8 Geo. V, Cap. 27, I desire to say that double registration of Wills is not necessary, and that all that is required is to copy the Will into the General Register, and properly index it, and where lands are mentioned in the Will to enter it in the proper Abstract Indexes.

The fees to be charged are those as for a single registration under Section 92, clauses (*a*) and (*b*).

It is important that there should be uniformity of practice, and it is desired that you follow the above instructions.

Yours truly,

JAS. W. MALLON,

Inspector.

To the Registrars of Deeds, Province of Ontario.

WILL—THE GENERAL REGISTER NUMBER IS NOW THE ONLY NUMBER TO BE USED WHEN ABSTRACTING WILLS.

To a Deputy Registrar:

Replying to your letter I beg to say with reference to Subsection 5 of Section 56 of *The Registry Act* as enacted by 8 Geo. V, Cap. 27, Sec. 7, that the only number now required upon a Will is the G.R. number. You will enter that number in the Abstract Index whenever it is necessary to make an entry therein of the Will. It is no longer copied in any book but the G.R. so that the Municipality number is not required.

AN EXEMPLIFICATION MAY NOW BE REGISTERED BY DEPOSIT OF THE ORIGINAL.

To a Registrar:

By registered letter I am returning the Exemplification of Probate.

In view of the amending Statute of last session, namely, 8 Edward 7, Cap. 27, Section 6, Mr. K's contention would seem to be the correct one that this exemplification may now be registered by the deposit of the original. The provision, however, of Subsection 4 of Section 56 of *The Registry Act* must first be complied with.

WILL—REGISTRATION BY DEPOSIT OF CERTIFIED COPY UNDER SEAL.

Referring to your letter of the 5th instant, I am returning herewith the document enclosed therewith, also Mr. F's letter.

If the document issued by the Surrogate Court of Niagara County in the State of New York is according to the law of that State, a certified copy of probate under seal of a Court having jurisdiction, I think it may be accepted by you for registration under Section 56 of *The Registry Act* as amended by the Statute of last session, namely, 8 George V, Cap. 27, by depositing the certified copy of probate in your office. The certificate referred to in Subsection 4 of said Section 56 must also be deposited with you.

NOTICE UNDER POWER OF SALE NEED NOT BE REGISTERED AS A CONDITION PRECEDENT TO THE REGISTRATION OF A CONVEYANCE UNDER THE POWER OF SALE IN A MORTGAGE.

To a Deputy Registrar:

Replying to your letter of the 20th inst., I beg to say that registration of a Notice under Power of Sale is no longer a condition precedent to the registration of a conveyance of property under the Power of Sale in a Mortgage.

STATUTORY DECLARATIONS MAY BE DEPOSITED UNDER THE CUSTODY OF DOCUMENTS ACT.—THEY MAY NOT BE REGISTERED.

To a Registrar:

I have been rushed with work or I should have given an earlier reply to your letter of the 29th ultimo.

I now beg to return Mr. E.'s letter to you and the Declaration. There are several decisions of the late Inspector against the registration of Statutory Declarations of this kind, but it seems to me that if the same were deposited under *The Custody of Documents Act* it will suit Mr. E.'s purposes since under Subsection 4 of that Statute as enacted by the Statutes of 1916, page 141, a reference must be made in the Abstract Index to the deposit.

I am assuming, of course, that the reference in the Declaration to the lands is a sufficient one for the purposes of the Statute.

THE SIGNATURE OF ONE OF SEVERAL OF THE GRANTORS IN A DEED, THAT OF A SOLDIER OVERSEAS, NOT VERIFIED BY AFFIDAVIT AS REQUIRED BY SECTION 35. SUGGESTIONS.

Letter from a Registrar:

There has been presented for registration a Q.C. Deed, from all the descendants of a previous owner, now deceased, to a Third Party. One of the Grantors is a soldier. The deed was executed by this soldier at a town in England, where he was in service. The execution of the deed by this soldier was witnessed by the Mayor of the town, who signs himself as such and as a J.P. This gentleman states that the soldier appeared before him and duly executed the deed. But there is no affidavit by this gentleman, neither does his seal of office appear.

Could such a deed be properly accepted and registered? The deed was returned because of other defects, and in the meantime I decided to write you.

Letters in reply:

I

I have been unable to acknowledge sooner the receipt of your letter of the 23rd ultimo, caused by absence from the city on duty. I have an impression that there is a ruling of Mr. Guthrie dealing with just such a deed as you mention. Would

you kindly look through Mr. Guthrie's Reports and then write to me whether or not your question is answered. I make this request in order to save time, as I am quite overwhelmed with work.

II

In continuation of my letter of the 11th instant, I beg to say that the ruling of the late Inspector that I had in mind is that at page 8 of the Report of the Inspector of Registry Offices for the year 1909.

As all the signatures to the Quit Claim Deed in question have been properly verified by affidavit with the exception of one, it would appear that you may not refuse registration. I would advise, however, that a Judge's order pursuant to Section 41 of *The Registry Act* be first obtained, but if the solicitor will not consent to secure such an order, then it will be necessary for you to show, in the remarks column in the Abstract Index, the fact that the execution by one of the Grantors has *not* been verified by affidavit.

Distinguish between Statutory Certificate of Discharge and a Release and Re-conveyance.

To a Registrar:

It is not clear from your letter, nor from Mr. Ball's, whether the instrument received by you is in the form of a Statutory Certificate of Discharge of Mortgage under *The Registry Act,* or a Common Law form of Release and Re-conveyance.

The Statutory Certificate of Discharge of Mortgage, being a creature of *The Registry Act,* in order to operate as a re-conveyance must comply with the provisions of the Statute, and therefore a Certificate of Discharge signed by Adeline W. may not be accepted for registration.

If, however, the document tendered is a Release and Re-conveyance at Common Law, and properly describes the lands mentioned in the Mortgage, I do not think you may refuse acceptance of such a release for registration.

Discharge of Mortgage. Party executing not the legal personal representative. Release and Re-conveyance suggested.

To a Deputy Registrar:

Herewith I beg to return by registered post the documents received with your letter, as follows: Ancillary Probate of the Will of Odile T. and Discharge of Mortgage of Les Communite des Reverendes Soeurs de Ste. Anne to Joseph D., and letter of Mr. L. to you dated June 7th last.

Absence from the city on duty has occasioned delay in replying to this letter sooner. From Mr. L.'s letter to you it would seem that Letters of Administration were taken by the nuns to the Estate of the deceased Mortgagee. If this be so and the said Letters are produced and registered there ought to be no objection to your receiving a Certificate of Discharge of Mortgage. No such Letters of

Administration, however, were enclosed with your letter, and the document marked "Ancillary Probate" of Odile T., and which you certify to be a true copy of the original, would seem to be a Probate of the Will of Odile T. which has been re-sealed by a Surrogate Court of Ontario, but neither the Will nor the Probate make any mention of the appointment of the Community as Executors of the deceased. If the said Community are neither the executors nor the administrators I do not see how you can accept the enclosed Certificate of Discharge of Mortgage. Could not the difficulty be overcome by a Common Law Form of Release and Re-conveyance?

DISCHARGE OF INSTRUMENTS OF THE NATURE MENTIONED IN SEC. 36.—FORM REQUIRED.

To a Registrar:

Herewith I beg to return the Discharge received with your letter of the 6th instant. If the instrument which the enclosed document purports to discharge is one of the nature mentioned in Section 36 of *The Registry Act,* then a Discharge may be registered, but such a Discharge would have to be drawn according to Form 12 as provided by Section 69.

DISCHARGE OF MORTGAGE MUST BE REGISTERED AGAINST ALL OF THE LOTS UPON THE PLAN. FEES.

To a Registrar:

Replying to your letter of the 20th instant, it is my opinion that since the amendment to Section 81, Subsection 11, of *The Registry Act* made by Section 12 of 8 George V, Cap. 27, the Discharge will have to be registered against all of the lots upon the plan except in the cases provided for by Section 85; and you are entitled to the fees provided by Clause (*p*) of Section 92 of *The Registry Act,* as amended by Section 16 of the said Statute, 8 George V, Cap. 27.

A MORTGAGEE MAKES A CONVEYANCE OF CERTAIN LANDS TO HIS DAUGHTER AND THEREIN GRANTS TO HER THE MONEYS DUE UPON THE MORTGAGE. SHE MAY NOT DISCHARGE THE MORTGAGE BY STATUTORY CERTIFICATE.

To a Registrar:

I am in receipt of your letter in which you state that Number 1607 is a conveyance from the Mortgagee in Number 8530 to his daughter, and which conveyance you say contains a clause to the effect that it grants "with the said lands the balance of money to become due on the said Mortgage, and interest, etc., etc."

This does not seem to me to amount to an Assignment of the Mortgage, and consequently, as assignee, I think the daughter may not now discharge the Mortgage by a Statutory Certificate of Discharge. I would suggest a Certificate signed by the Executor or Administrator of the Mortgagee, or if the Mortgagor is satisfied to take the daughter's title, a Release and Re-conveyance from her may be registered.

REGISTRAR BEFORE ACCEPTING AN INSTRUMENT FOR REGISTRATION SHOULD BE SATISFIED THAT THE LANDS ARE PATENTED.

To a Registrar:

In reply to your letter of the 9th inst., with reference to Subsection 7 of Section 34 of *The Registry Act,* I may say that before accepting for registration instruments other than those referred to in this Subsection a Registrar should be satisfied that the lands affected have been patented. The best evidence of this, of course will be the production of the patent. A search, however, in the Department of Crown Lands at Toronto will, no doubt, reveal the correct state of affairs.

PATENT NEED NOT BE REGISTERED AS A CONDITION PRECEDENT TO THE REGISTRATION OF INSTRUMENTS AFFECTING THE PATENTED LANDS.

To a Deputy-Registrar:

In my letter to you of yesterday's date I was not quite explicit enough in my reference to Subsection 7 of Section 34 of *The Registry Act.* Of course, it is only certain Mortgages (those mentioned in that subsection) that may be registered covering unpatented lands.

I referred to it merely in support of my view that where a Patent has been issued, and the Registrar has notice of it, it need not be registered as a condition precedent to the registration of subsequent instruments covering the lands that have been patented.

The Registrar, however, should be furnished with sufficient evidence, by production of the Patent or otherwise, that the lands are included in those described in the Patent.

CERTAIN MORTGAGES, INCUMBRANCES OR LIENS ARE THE ONLY INSTRUMENTS THAT MAY BE REGISTERED AGAINST UNPATENTED LANDS.
SECTION 34 (7) APPLIES AS WELL TO DOMINION AS TO PROVINCIAL LANDS.

To a Registrar:

Herewith by registered post I beg to return the deed in duplicate from Philomene P. to the G. N. O. Company which I received with your letter of the 14th inst.

I would suggest that you write to Mr. P., who desires this Instrument registered, and inform him that the affidavit of the subscribing witness has not been sworn to: also draw his attention to Subsection 7 of Section 34 of *The Registry Act* which provides that with the exception of certain Mortgages, Incumbrances and Liens no Instruments affecting unpatented lands shall be registered, and this applies as well to Dominion as to Provincial lands.

I would suggest that you ask him to send to you the Patent of these lands for perusal or registration. You will, of course, have to return the deed in order to have the affidavit of execution sworn. The deed had better be returned by registered letter.

UNPATENTED LANDS—MEANING OF THE WORDS IN SUBSECTION 7 OF SECTION 34 OF THE REGISTRY ACT.

To the Honourable the
Attorney-General. January 14th, 1919.

Conveyance from His Majesty the King to the Township of T., of Military Reserves known as The Triangular and Square Redoubts.

The enclosed correspondence has been transferred to me for attention.

As the question involves the construction of a Statute, and because of the letter of Mr. A. B. T., to the Honourable the Minister of Public Works, I am writing to you for an interpretation of Subsection 7 of Section 34 of *The Registry Act,* as the few authorities I have been able to find, that in any way bear upon the subject, do not define just what is meant by the words "unpatented lands."

The facts appear as follows:—

The above lands were transferred to the Province, not by Letters Patent, but by Dominion Order-in-Council dated September 17th, 1898; and by Provincial Order-in-Council of May 18th, 1917, the Minister of Public Works was authorized to convey the same to the Township of T., in the County of S., which Township has been authorized to purchase them by an Ontario Statute, 6 George V, Cap. 24, Section 52. A conveyance from the Minister of Public Works, dated June 14th, 1917, to the Township of T., has been registered, but the registration of a plan and certain conveyances of small portions of the above lands are now refused registration by the Registrar of Deeds, because of said Subsection 7 of Section 34 of *The Registry Act,* and that a Patent has not issued.

Undoubtedly no Letters Patent under the Great Seal of the Province have been issued granting the lands in question, but the title is as fully out of the Crown as if such Letters Patent had issued. If you think it possible to interpret the words "unpatented lands" in said Subsection 7 of Section 34 as "ungranted lands," then, the difficulty can be got over at once. There can be no doubt that "ungranted lands" (that is, lands the title to which remains in the Crown) is what is contemplated by the words "unpatented land" appearing in this subsection.

I understand that on various occasions lands have been granted by Orders-in-Council, instead of by Letters Patent under the Great Seal, which is the usual method; and you will notice that this method is recognized in grants made to the Temiskaming and Northern Ontario Railway Company by R.S.O., Cap. 38, Section 13. I have observed documents endorsed "Letters Patent" and so styled, which upon examination turned out to be charters given to Companies by the Provincial Secretary, under Section 4 of *The Companies Act,* under his signature and seal of office, and not under the Great Seal of the Province; so that it would appear that in every-day language Crown Grants are referred to as Patents. If you are not prepared to place the suggested construction upon the Section, then, an Act extending the meaning of the words "unpatented lands" should be passed at the next session of the Legislature to cover lands granted, or authorized to be granted, by Orders-in-Council.

I am sending a copy of this letter to Mr. T.

Awaiting your instructions in the matter, I beg to remain,

Sir,

Your obedient servant,

The Registry Act seems to contemplate the conveyance of lands otherwise than by Letters Patent. See Sections 4 and 35.

From the Secretary,
Department Public Works, Ontario.

Toronto, March 8th, 1919.

Dear Sir:

Re Conveyance from His Majesty the King to the Township of T. of Military Reserves known as The Triangular and Square Redoubts.

With reference to your letter addressed to the Honourable the Attorney-General, dated January 14th last, and transferred to this Department, advising the passing of an Act extending the meaning of the words "unpatented lands" to enable the purchasers of the above property to register their deeds. Before doing this if the Province would issue a Patent to the Township of T. by virtue of the title conveyed by the Dominion Order-in-Council dated September 17th, 1898, to the Province and have it registered, would not that overcome the objection raised by the Registrar in refusing to register the Plans or any Conveyance in default of no Patent having been issued. I might mention that some few years ago we made a transfer of some land at the Sault and on finding that no Patent had been issued we overcame the difficulty by getting the Province to issue the Patent and on being registered the registration of the Conveyance followed.

I am sending you a draft form of the proposed Patent Deed from the Crown to the Township of T.

Awaiting your advice in the matter, I am, Sir,

Your obedient servant,

Letter in reply:

March 14th, 1919.

Dear Sir:

Re Conveyance from His Majesty the King to the Township of T. of Military Reserves known as the Triangular and Square Redoubts.

Replying to your letter of the 8th instant, I beg to say that it would seem to me that if a Patent were issued as suggested that the Registrar could not very well object to the registration of instruments as the lands would then be patented. Whether or not a Dominion Patent should also issue is a question not for the Registrar, but for those accepting title.

Yours truly,

MEMORANDUM.

Since the foregoing Report was presented the Legislature has repealed Subsection 7 of Section 34 of *The Registry Act* and substituted a new Subsection—See 9 Geo. V. Cap. 25, Sec. 16.

INSTRUMENTS THAT AFFECT BOTH PATENTED AND UNPATENTED LANDS—DIRECTIONS.

By registered post I beg to return the lease of right of way sent to me with your letter of the 22nd ult. I notice that you say that one of the lots described in this instrument is unpatented and because of that you have declined to register the instrument.

In reply I beg to refer you to the reports of the Inspector of Registry Offices for the year 1910, page 35, and for the year 1911, page 38, from which you will observe that this instrument may be registered against the lands that have been patented and your certificate of registration must be limited accordingly. In other words, the instrument should be entered upon the lot that is patented land and you cannot under Subsection 7 of Section 34 register it against the unpatented lot.

In the report of the Inspector for the year 1911, at page 38, are instructions for the entry to be made in the remarks column of the Abstract Index.

ASSIGNMENT OF MORTGAGE—SOME OF THE LANDS DESCRIBED IN THE MORTGAGE WERE INADVERTENTLY OMITTED FROM THE ASSIGNMENT—REGISTRATION OF A CONFIRMATORY ASSIGNMENT OF MORTGAGE SUGGESTED TO ENABLE ASSIGNEE TO DISCHARGE THE MORTGAGE.

To a Solicitor:

Herewith by registered post I am returning the Discharge of Mortgage and letter of the Deputy Registrar received with your favour of the 9th inst.

It would seem from the correspondence that from some of the Assignments of Mortgage two of the Township lots described in the Mortgage were inadvertently omitted.

It would seem to me that a confirmatory assignment of Mortgage reciting the error and containing descriptions of the omitted parcels will have to be registered before this Discharge of Mortgage may be accepted for registration. It will also be necessary to amend the Discharge by a recital therein of the registration of the said confirmatory assignment of Mortgage.

REGISTRATION OF AN ASSIGNMENT FOR THE BENEFIT OF CREDITORS IN WHICH SOME ONLY OF THE LANDS OF THE INSOLVENT ARE PARTICULARLY DESCRIBED AND REGISTRATION IS DESIRED AGAINST OTHER OF HIS LANDS.

To Solicitors:

Having heard from the Registrar of Deeds and his Deputy, I now beg to say in continuation of my letter to you of the 10th inst., that the Registrar was right in not recording the Assignment for the Benefit of Creditors in the General Register, and properly recorded the same against lot 15 in the 12th concession in the Township of E., and lot 12 in the 12th concession, being the lands described in the said Assignment for the Benefit of Creditors.

As I understand the matter from the correspondence, the description was the usual one contained in such documents, being "all the personal property which

may be seized or sold under execution, and all his real estate credits, and effects," but to this description there was added the following: "and more particularly lot 15 in the 12th concession of the Township of E., and part of 12 in the 12th concession." The question now referred to me is whether or not the document may be recorded against other lands not mentioned in the Assignment by annexing a Statutory Declaration pursuant to Section 34 of *The Registry Act*.

My view is that the Assignment for the Benefit of Creditors is an instrument which affects all the lands of the insolvent, and the fact that some only of his lands are therein particularly described does not render it inoperative as to those that are not therein mentioned; in other words, it affects certain of the lands of the insolvent without local description, and therefore may be re-registered against them pursuant to Section 34, Subsection 1.

This would seem to have been the opinion of the late Mr. Guthrie. See Report for the year 1901, page 16, and also that for 1906, page 31, last paragraph.

The form of the Declaration should be the usual one under Subsection 1 and not Form 15 provided by Subsection 2, since the document has already been registered not under Section 34 but pursuant to the general provisions of *The Registry Act*. When it has been registered pursuant to Subsection 1 it may be further registered against other additional lands by the registration of the declaration Form 15.

Seal of Notary Public—Form of.

To a Registrar:

Herewith by registered post I beg to return the deed received with your letter.

The seal of the notary would appear to me to be sufficient, as I am not aware of any provision that requires that the name of the notary be impressed upon his seal.

Affidavit of execution may not be sworn before a Mining Recorder.—Declaration of Partnership—Firm name—3 options.

To a Registrar:

Replying to your letter, I beg to say that it does not seem to me that the affidavit of execution required by *The Registry Act* may be taken before an Assistant Mining Recorder. I would suggest that the affidavit be re-sworn before a Commissioner or some other officer competent to take it.

It would seem from Section 9, Subsection 1, R.S.O., Cap. 139, that the Declaration of Partnership referred to may be registered. He apparently has the following options: First, to use his own name. Second, a name other than his own name with the addition of "and Company." Third, any name or designation indicating plurality of members.

AFFIDAVIT OF EXECUTION MUST CONFORM IN WORDING TO FORM 5.

To a Registrar:

Replying to your letter of the 23rd inst., I beg to say that I agree with you that the Affidavit of Execution should be drawn in the form set out as Form 5 of *The Registry Act*. The words "by the said parties" may not be omitted from the second paragraph of the affidavit.

RAILWAY PLANS CERTIFIED BY THE SECRETARY OF THE BOARD OF RAILWAY COMMISSIONERS OF CANADA ARE DEPOSITED.

To a Registrar:

Replying to your enquiry if it is necessary to have the consent of the Railway Board to Plans showing rights of way of the Canadian Pacific Railway through certain Townships in your Registry Division, I beg to refer you to Secs. 158 to 160 of the Revised Statutes of Canada, Chapter 37.

Sec. 60 provides for the deposit by the Company in the Registry Office of copies of plans, profiles and books of reference duly certified by the Secretary of the Board. The Secretary is Sir W. Cartwright, of Ottawa.

REGISTRY AMENDMENT ACT, 1918—SECTION 18 WILL APPLY TO INCOMES FOR THE YEAR 1918; SECTION 20 APPLIES TO REGISTRARS IN PROVISIONAL JUDICIAL DISTRICTS.

To a Registrar:

I have your letter with reference to *The Registry Amendment Act, 1918*, and the same has been considered by the Department.

As to Section 18, it is thought that this Section will apply to the incomes of the Registrars for the whole of the present year, that is, to their net incomes for the year ending December 31st, 1918, which, of course, cannot be ascertained until the close of the year.

As to Section 20, it is thought that the word "such," where it occurs immediately before the word "Registrar" in the fifth line thereof refers only to the Registrars mentioned in line two, namely, to Registrars in the Provisional Judicial Districts.

INSTRUMENT ALREADY REGISTERED IN ONE REGISTRY OFFICE IS SOUGHT TO BE REGISTERED IN ANOTHER—CERTIFICATE REQUIRED BY SECTION 44—AN OFFICE COPY BEARING THE CERTIFICATE OF REGISTRATION (FORM 8) NOT SUFFICIENT.

To the Registrar at X.:

My objection to the documents in the Registry Office at P. was not because the Certificate of Registration was signed by your Deputy, but because they were not

"certified copies" as required by Section 44, but were office copies made by a solicitor bearing the usual certificate of registration (Form 8) as to the registration of the original in your office.

What Section 44 requires to be delivered by you is a certified copy under your signature and seal of office, in which certificate you shall state the time, place and other particulars of the registration, and that the copy is a true copy of the instrument, "and of all other documents connected with or relating to the same of which they respectively purport to be copies," and in the case of a Will "that the affidavit proving the due execution of it is deposited" in your office.

I did not see the Registrar at the time of my inspection of the Registry Office at P., and my conversation was with his Deputy. I did not order cancellation of the registration, but suggested that the Solicitor be written to and given an opportunity to register properly certified copies at P.

CERTAIN OLD INSTRUMENTS EXECUTED BY ATTORNEY MAY BE REGISTERED WITHOUT REQUIRING REGISTRATION OF THE POWER OF ATTORNEY. REGISTRAR MAY, HOWEVER, IN SOME CASES, HAVE TO BE GUIDED BY THE ADVICE OF HIS SOLICITOR.

From a Registrar:

I have been offered for registration a Deed, 20th November, 1869, made by John Neilon to Jane Donaldson, *et al.* It is signed by "Robert Little," and the affidavit as to execution states that it was "executed by Robert Little, Attorney for John Neilon one of the parties thereto." No Power of Attorney has been registered. Is there any way of registering this? The affidavit was sworn 27th November, 1869.

Letter in Reply:

From the opinion given by Mr. Guthrie at page 38 of his Report for 1913 it would seem that the Power of Attorney need not be registered as a condition precedent to the registration of an instrument executed as long ago as 1869. It may, however, be necessary for you to consult your Solicitor with reference to the execution of the Deed in question and the affidavit of execution attached thereto, especially if the registration will in any way cast a cloud upon the title.

CONSENT OF INSPECTOR REQUIRED UNDER SECTION 103 OF THE REGISTRY ACT.

To a Registrar:

The question in your letter of the 25th April relative to Section 103 of *The Registry Act*, as enacted by 8 George V, Cap. 27, Section 18, has been submitted by several of the Registrars and has been considered by the Honourable the Attorney-General, and I am instructed to inform you that no increase is to be made in the salaries to your Deputies, Clerks or Assistants without first obtaining the approval of the Inspector, and also that a like approval as to the salaries to be paid must be obtained whenever any new appointments are made to your staff.

DAYLIGHT SAVING—DOMINION AND PROVINCIAL STATUTES AND ORDERS-IN-COUNCIL, NOT LOCAL MUNICIPAL BY-LAWS, GOVERN.

Osgoode Hall, Toronto, April 24th, 1918.

To all Sheriffs, Local Registrars, Registrars of Deeds, etc., etc.,
in the Province of Ontario.

DEAR SIRS:

The Parliament of Canada has passed an Act, known as *The Daylight Saving Act, 1918,* which, among other things, provides that it shall be in force during the present year for such time as may be prescribed by the Governor in Council, and that during the prescribed period in which the Act is in force the time for general purposes in Canada for each Province shall be one hour in advance of the time which, under the law of the Province, is the time prescribed for such Province.

Pursuant to the above-mentioned Act, the Governor in Council passed an Order dated the 12th April, 1918, which provides that the prescribed time during which the *Daylight Saving Act, 1918,* is to be in force during the present year shall be from 2 o'clock on the morning of Sunday, the 14th day of April, 1918, until 2 o'clock on the morning of Thursday, the 31st day of October, 1918.

The Legislative Assembly of the Province of Ontario, by Section 25 of Chapter 20, 8 George V, amended *The Definition of Time Act,* R.S.O., Chapter 132, and provided that the Lieutenant-Governor in Council might pass regulations varying the reckoning of standard time as defined by Subsections 2 and 3 of Section 2 of the said Act.

Pursuant to the last-mentioned amendment, the Lieutenant-Governor in Council, on the 10th April, 1918, passed an Order-in-Council providing the following regulations:

> 1. During the period in each year in which *The Daylight Saving Act, 1918* (Dominion), is in force, the time for general purposes in Ontario shall be the time as defined by the said Act instead of "standard time," as defined by Section 2, Subsections 2 and 3, by *The Definition of Time Act* (R.S.O., 1914, Chapter 132).
>
> 2. The Ontario Railway and Municipal Board is authorized to fix and adjust the time-tables of all railways subject to its control in so far as Regulation No. 1 may necessitate such fixing or adjusting.

You will therefore govern yourselves accordingly.

It has been reported to me that certain municipalities have passed by-laws purporting to retain standard time as it existed prior to the passing of the above-mentioned amendments and regulations. In my opinion the validity of such by-laws is very doubtful. It is, however, quite clear that in no event could such a by-law affect time in this Province with regard to the opening and closing of Provincial Offices or with regard to expressions of time occurring in Acts of the Ontario Legislature or in Rules of Court, by-laws, deeds or other instruments, or with regard to expressions of time in other matters over which the Ontario Legislature has jurisdiction

Yours truly,
JAMES W. MALLON,
Inspector.

CONSIDERATION OF CERTAIN SECTIONS OF THE REGISTRY AMENDMENT ACT, 1918.

To a Registrar:

Re The Registry Amendment Act, 1918.

I have to thank you for your letter of the 23rd ult., relative to Bill No. 103, an amendment to *The Registry Act* just recently become law. I may say that under Section 6, amending Clause (*b*) of Section 56, Subsection 1, when it is desired that the original Probate be deposited in the Registry Office you need not insist upon certified copies thereof being left with you as well.

As to Section 7, I think that hereafter wills need only be copied into the General Register; in other words, that double registration is done away with. When the will contains a description of lands sufficient to identify them, you are to make entries in the Abstract Index.

As to Section 8, amending Section 62, I fear that it will be necessary for you to read up the law as each case arises, and when in doubt to act upon the advice of your Solicitor. The amendment conforms to the recommendations of the late Mr. Guthrie, and would seem to confirm his opinion expressed at page 6 of the Report of the Inspector of Registry Offices for the year 1913.

As to Section 14, you are not entitled under this Section to an additional 25c. for the certificate on an Abstract. The fees for a certified Abstract are provided for by Section 92 (*f*) of *The Registry Act.*

MORTGAGE TO SECURE THE ISSUE OF BONDS—MAY BE ENDORSED "NOT TO BE REGISTERED IN FULL."

To a Registrar:

Referring to your letter of the 24th ult., I beg to return by registered post the Mortgage to secure issue of bonds N. Lumber Company to M. Trust Company and to observe as follows: Although this document is drawn somewhat in the form of a deed of trust it is really a Mortgage and is so styled as a Mortgage throughout, by the parties, and is executed in pursuance of a By-law attached thereto, which By-law expressly authorizes the making of a Mortgage to secure the bonds. I have perused this document carefully and I have failed to find any special provision in it which would make it other than a Mortgage, or which would appear to be other than incidentals to a Mortgage; I therefore think that the document is one which may be endorsed "Not to be registered in full."

It is to be regretted, of course, that so lengthy a document as this should be allowed to be registered for so small a fee, but unfortunately there is no other fee allowed by the *Registry Act* than that provided in the Section.

USE OF THE WORD "GRANT" INSTEAD OF THE LETTERS "B & S" WHEN ENTERING DEEDS OF GRANT IN THE ABSTRACT INDEX.

From a Solicitor:

Do you not think it would effect a much needed improvement if you were to direct the various Registrars to drop the practice (which seems a very unreason-

able one) of indicating deeds of grant on their abstract indices by the letters "B. and S.," meaning bargain and sale, as the old conveyance of bargain and sale fell into disuse in this country more than half a century ago, it seems rather absurd to have our Registrars indicating our present deeds of grant by that discarded name.

I wrote to that effect some weeks ago to the editor of the *Canadian Law Journal,* and I observe that he has published my letter in the current issue.

If you approve the change I have no doubt you could do more to affect it than any other individual, and I am sure Mr. O'Brien and Mr. Lefroy the two editors of the two Law Journals would assist you in any way in their power.

Letter in Reply:

On my return I have your letter of the 17th inst., for which I am obliged. I had not seen your letter published in the *Canadian Law Journal.*

The use of the letters "B and S." instead of the word "Grant," was one of the first things I noticed when first inspecting Registry Offices some seven years ago, but I did not suggest a change after my attention was drawn to the Report of the Inspector of Registry Offices for the year 1906 wherein at page 4 the late Inspector in giving instructions as to the conduct of the offices stated that the letters "B and S" "though a little old fashioned" might be used. It is to be observed that these letters were used in Schedule "E" to the then *Registry Act,* R.S.O. 1897, Cap. 136.

It seems to me that as I visit the various Registry Offices this year I might well instruct Registrars to discontinue the use of these letters, and substitute the word "grant." Thanking you again for having brought the matter to my attention, I am.

LETTER OF INSTRUCTIONS REFERRED TO ON PAGE 5 OF REPORT.

Office of the Inspector of Legal and Registry Offices, Osgoode Hall,

TORONTO, December 6th, 1915.

DEAR SIR,—I am instructed by the Honourable the Attorney-General to inform you that in future no increase is to be made in the salaries of your Deputies, Clerks, or Assistants without first obtaining the approval of the Inspector, and also that the like approval as to the salaries to be paid must be obtained whenever any new appointments are made to your staff.

Yours truly,

JAS. W. MALLON,

Inspector.

AMENDMENTS MADE TO THE REGISTRY ACT R.S.O. CAP. 124—INCLUDING 8 GEO. V, 1918.

To a Registrar:

The following is, I think, a complete list of the Amendments made to R.S.O., Cap 124, The Registry Act:—

Subsection (4) added to Section 18 by 4 George V, Cap. 23, Section 1.

Subsection (5) added to Section 18 by 7 George V, Cap. 27, Section 25.

Clause (*a*) added to Subsection 8 of Section 23 by 5 George V, Cap. 20, Section 13.

Clause (*b*) of Subsection 1 of Section 26 amended by 8 George V, Cap. 27, Section 2.

Clause (*e*) of Subsection 1, of Section 26 amended by 8 George V, Cap. 27, Section 3.

Clause (*h*) added to Subsection 1 of Section 26 by 8 George V, Cap. 27, Section 4.

Subsection 2 of Section 48 amended by 6 George V, Cap. 24, Section 20.

Section 48 Subsection 3 amended by 8 George V, Cap. 27, Section 5.

Clause (*b*) of Subsection 1 of Section 56 amended by 8 George V, Cap. 27, Section 6.

Subsection 5 added to Section 56 by 8 George V, Cap. 27, Section 7.

Section 62 amended by 8 George V, Cap. 27, Section 8.

Subsection 7 added to Section 68 by 8 George V, Cap. 27, Section 9.

Clause (1) of Section 70 amended by 8 George V, Cap. 27, Section 10.

Subsection 6 of Section 81 amended by 4 George V, Cap. 23, Section 2.

Subsection 7 of Section 81 amended by 8 George V, Cap. 27, Section 11.

Subsection 11 of Section 81 amended by 8 George V, Cap. 27, Section 12.

Subsections 14 and 18 of Section 81 of *The Registry Act* repealed, a new section substituted by 7 George V, Cap. 30, Section 1.

Clauses (*b*), (*g*), (*h*), (*p*) and (*s*) of Section 92 amended by 8 George V, Cap. 27, Sections 13 and 17 inclusive.

Subsection 5 of Section 99 amended by 7 George V, Cap. 27, Section 26.

Sections 101, 102 and 103 repealed, a new Section substituted by 8 George V, Cap. 27, Section 18.

Section 106 repealed, a new Section substituted by 8 George V, Cap. 27, Section 19,

Section 109 of *The Registry Act* repealed, a new Section substituted by 8 George V, Cap. 27, Section 20.

Part One of Schedule "A" to *The Registry Act* amended by 8 George V, Cap. 27, Section 21.

The heading of Part Two of Schedule "A" repealed, a new heading substituted, 8 George V, Cap. 28, Section 22.

The description of Registry Division No. 50 in Part Two to Schedule "A" amended by 8 George V, Cap. 27, Section 23.

The description of Registry Division No. 54 in Part Two to Schedule "A" amended by 8 George V, Cap. 27, Section 24.

APPENDIX

FEES AND EMOLUMENTS received by the Registrars of Deeds for the Province of Ontario for which are contrasted the amount of Fees, Surplus to Municipalities

SCHEDULE A.

Number.	Name of Registry Division.	Name of Registrar.	No. of Municipalities.	Total No. of instruments registered in 1917.	Instruments registered in 1918.			
					Total number.	Fees therefor.	Uncopied.	Copied but uncompared.
			1	1a	2	3	4	5
						$ c.		
1	Algoma	C. F. Farwell H. J. Moorhouse	11	1,725	2,108	3,518 01	809	.....
2	Brant	A. Graham	7	2,619	3,431	5,446 00	.....	.....
3	Bruce	W. H. McFarlane	28	2,989	3,327	5,011 35	143	412
4	Carleton	Miss Coffey, Deputy Reg	12	2,662	2,317	3,986 45	62	.....
5	Dufferin	D. J. Hunter	9	1,826	1,333	2,010 20	.....	.....
6	Dundas	R. J. Dillen	8	1,036	1,131	1,764 55	.....	.....
7	Durham, East	W. H. Scott	5	526	686	1,142 55	.....	.....
8	Durham, West	S. Pollard	5	582	725	1,017 20	.....	.....
9	Elgin	J. H. Coyne	15	3,150	3,199	5,119 55	.....	156
10	Essex	J. O. Reaume	26	8,892	8,014	12,827 90	196	.....
11	Fort William	J. E. Swinburne	16	.....	1,397	2,297 12	.....	.....
12	Frontenac	W. J. Gibson	18	1,046	1,335	2,223 00	.....	.....
13	Glengarry	J. A. McRae	8	1,011	974	1,439 49	.....	.....
14	Grenville	W. S. Johnston	9	760	925	1,696 20	.....	.....
15	Grey, North	Geo. P. Creighton	13	2,040	2,058	3,040 55	347	.....
16	Grey, South	A. H. Jackson	11	1,573	1,654	2,485 65	375	168
17	Haldimand	P. R. Howard	14	1,578	1,302	2,312 93	.....	.....
18	Haliburton	E. C. Young	10	287	322	560 75	3	.....
19	Halton	V. Chisholm	9	1,553	1,553	2,482 10	281	200
20	Hastings	S. Russell	33	2,721	3,412	5,505 55	482	.....
21	Huron	W. Coats	25	3,012	3,435	5,191 00	.....	.....
22	Kingston	J. P. Gildersleeve	1	973	1,136	1,944 35	61	.....
23	Kent	A. J. Dunn	24	1,619	4,547	7,000 74	449	.....
24	Kenora	C. W. Chadwick	1	161	116	172 80	.....	.....
25	Lambton	A. MacLean	21	3,807	4,183	6,413 03	99	22
26	Lanark, North	H. C. Bowland	10	669	697	1,176 55	15	.....
27	Lanark, South	J. Armour	9	1,479	1,558	2,097 80	25	25
28	Leeds	J. T. Gallagher	16	1,894	1,853	2,935 15	32	.....
29	Lennox and Addington	G. S. Reid	17	1,060	1,195	1,955 40	175	.....
30	Lincoln	C. E. Fisher	14	3,297	3,057	5,111 95	380	.....
31	London	R. H. Dignan	1	2,564	2,403	3,624 90	.....	.....
32	Manitoulin	W. R. Abrey	22	456	558	997 22	20	.....
33	Middlesex, East and North	J. H. Marshall	14	2,591	2,689	4,330 18	.....	.....
34	Middlesex, West	R. Dunlop	9	960	1,238	2,070 25	22	.....
35	Muskoka	J. E. Lount	27	798	890	1,455 40	124	.....
36	Norfolk	W. M. McGuire	13	1,998	1,914	3,010 60	.....	.....
37	Northumberland, East	A. G. Willoughby	9	1,126	1,282	2,004 70	40	.....
38	Northumberland, West	H. McCullough	5	643	706	924 95	71	.....
39	Nipissing	J. M. Deacon	19	733	635	956 20	.....	.....
40	Ontario	G. W. Dryden	17	2,532	2,626	4,207 08	.....	55
41	Ottawa	J. P. Fisher	1	3,886	3,124	5,066 35	54	445
42	Oxford	G. R. Pattullo	17	3,282	3,104	4,744 25	508	.....
43	Parry Sound	Chas. Gillespie	52	819	811	1,379 20	.....	.....
44	Peel	F. H. Jackson	8	1,704	1,595	2,191 50	75	15
45	Perth, North	James Steele	9	2,401	2,434	3,710 55	.....	.....
46	Perth, South	H. F. Sharp	7	894	1,504	1,743 60	270	250
47	Peterborough	B. Morrow	19	1,879	2,433	4,112 72	238	238
48	Prescott	F. W. Thistlethwaite	10	1,434	1,501	2,329 50	60	.....
49	Prince Edward	Walter MacKenzie	10	989	1,018	1,701 45	306	.....
50	Rainy River	W. J. Keating	12	22	44	49 70	3	.....
51	Renfrew	R. A. Campbell	22	2,215	2,763	4,420 20	.....	.....
52	Russell	John A. Gamble	6	1,649	1,297	1,927 15	40	.....
53	Simcoe	R. J. Sanderson	30	4,601	5,503	8,769 11	69	.....
54	Stormont	J. C. Alguire	6	1,329	1,175	1,842 00	5	.....
55	Sudbury	S. Fournier	30	418	495	962 56	.....	.....
56	Temiskaming	W. H. Lewis	1	56	46	47 90	.....	.....
57	Thunder Bay	J. M. Munro	13	2,336	911	1,532 90	.....	.....
58	Toronto, East	Peter Ryan	1	10,921	13,465	20,628 75	425	.....
59	Toronto, West	R. H. Bowes	1	12,543	14,037	21,881 35	1,238	.....
60	Victoria	Chas. D. Barr	19	1,682	1,648	2,665 90	.....	.....
61	Waterloo	Oscar S. Eby	13	4,315	4,187	6,543 05	226	.....
62	Welland	J. C. Crow	16	4,951	5,500	8,947 66	3,211	.....
63	Wellington, North and Centre	James Tucker	11	1,320	1,393	1,974 40	34	75
64	Wellington, South	Henry Hortop	11	1,850	2,138	3,429 90	138	201
65	Wentworth	R. K. Hope	11	9,471	10,824	17,024 36	76	103
66	York, East and West	W. J. Hill	14	6,767	8,131	14,040 83	362	295
67	York, North	J. D. McKay	10	1,363	1,647	3,207 73	52	.....
		Totals	901	158,965	170,649	267,312 83	11,601	2,570

the year 1918, made in accordance with the provisions of R.S.O., 1914, cap. 124, sec. 99, with and Registrars' incomes for the years 1916 and 1917.

SCHEDULE A.

Patents.		Deeds.		Mortgages.		Dis. of Mortgages.		Wills.		Leases.		
No. registered.	Fees for same.	No. registered.	Fees for same.	No. registered.	Fees for same.	No. registered.	Fees for same.	No. registered.	Fees for same.	No. registered.	Fees for same.	Number.
6	7	8	9	10	11	12	13	14	15	16	17	
	$ c.		$ c.		$ c.		$ c.		$ c.		$ c.	
5	12 15	995	1,966 85	320	475 11	448	424 85	70	164 10	2	4 90	1
....	.....	1,389	2,763 50	804	1,163 90	835	800 95	153	319 30	11	24 55	2
2	4 30	1,357	2,612 40	628	854 75	952	851 45	159	369 10	4	10 65	3
....	.....	930	1,903 56	422	606 03	583	724 76	109	272 85	.....	.....	4
....	.....	517	987 00	238	333 05	410	391 60	56	132 15	2	5 80	5
....	.....	485	894 20	214	310 75	270	242 05	64	164 65	5	17 15	6
....	.....	297	608 90	113	155 50	174	175 00	47	114 85	4	7 85	7
....	.....	267	524 75	94	133 30	143	144 05	32	71 60	2	6 60	8
....	.....	1,194	2,436 80	642	902 05	882	844 60	142	355 80	26	74 70	9
1	2 00	3,763	7,322 90	1,383	1,915 70	1,622	1,442 70	134	311 30	131	315 80	10
....	.....	716	1,430 62	146	215 65	250	233 90	20	45 05	1	2 30	11
6	16 75	553	1,048 30	279	401 85	334	416 60	59	172 50	20	44 55	12
....	.....	319	617 70	223	297 10	207	240 65	59	138 85	2	5 15	13
....	.....	366	757 85	181	259 90	255	287 35	67	150 55	4	11 25	14
1	2 00	819	1,540 35	344	467 20	669	583 40	101	219 85	6	15 75	15
3	5 40	592	1,128 20	319	419 20	487	444 45	106	245 10	3	10 00	16
5	9 40	452	862 00	255	343 20	340	312 35	64	151 75	27	63 10	17
1	1 70	187	363 50	57	84 80	46	42 10	9	22 20	.....	.....	18
1	2 15	569	1,161 35	383	538 90	426	418 55	76	184 85	3	7 65	19
6	10 80	1,485	2,956 90	629	869 38	753	686 32	178	392 20	24	56 70	20
....	.....	1,269	2,437 00	653	880 05	998	935 30	266	583 60	2	4 60	21
2	8 00	400	820 95	276	392 35	312	436 95	39	120 65	2	5 15	22
....	.....	1,536	2,965 60	900	1,219 75	1,085	939 15	169	360 90	94	246 75	23
....	.....	57	106 80	17	21 50	27	23 50	1	1 00	.....	.....	24
....	.....	1,703	3,290 94	826	1,161 84	1,171	1,088 00	175	357 80	23	47 75	25
....	.....	319	639 70	103	153 30	159	162 95	49	117 99	.....	.....	26
2	4 00	425	897 35	262	302 75	293	301 40	67	162 65	5	10 75	27
8	15 40	717	1,397 90	340	476 85	476	456 25	153	315 10	21	45 80	28
1	3 45	503	989 10	220	306 10	319	319 40	70	197 15	1	2 55	29
....	.....	1,317	2,647 50	617	888 80	723	825 00	100	242 55	19	41 55	30
....	.....	848	1,672 05	529	753 60	690	639 90	112	253 65	.....	.....	31
2	4 75	259	513 41	115	171 46	96	97 70	15	34 80	38	118 35	32
....	.....	1,092	2,144 83	504	836 25	704	665 70	154	353 05	14	26 70	33
1	2 00	416	826 55	199	276 00	280	271 10	42	111 50	163	360 45	34
7	16 00	518	1,019 75	88	126 20	139	123 70	36	81 10	2	6 90	35
....	.....	699	1,368 95	368	510 45	518	493 90	86	219 85	17	56 95	36
....	.....	505	995 95	248	338 00	345	327 70	60	133 90	2	3 55	37
....	.....	299	599 75	108	149 60	173	171 35	42	92 60	3	5 55	38
1	2 80	274	534 05	111	159 30	157	143 95	13	21 80	4	8 75	39
....	.....	1,121	2,224 88	478	666 40	667	633 25	127	305 60	2	6 70	40
4	3 40	910	1,965 95	647	910 50	825	19 10	201	466 05	3	11 25	41
....	.....	1,128	2,223 50	663	887 45	855	855 65	151	334 95	.....	.....	42
2	2 80	424	850 60	109	164 15	172	164 15	26	68 20	2	6 05	43
2	3 40	493	932 25	377	442 15	356	352 10	78	175 30	9	12 60	44
....	.....	942	1,833 55	579	797 90	652	612 95	97	222 55	.....	.....	45
....	.....	381	744 75	212	299 00	261	246 95	70	149 15	.....	.....	46
4	8 00	1,032	2,067 60	445	624 70	580	616 65	106	276 85	.....	.....	47
....	.....	525	1,061 20	364	529 95	420	368 10	49	122 25	.....	.....	48
....	.....	375	810 35	194	274 60	261	246 95	65	152 55	4	10 30	49
2	2 00	.....	.....	.....	.....	.....	.....	1	2 70	.....	.....	50
....	.....	1,229	2,444 90	520	722 60	696	654 10	79	196 65	1	2 95	51
....	.....	467	912 80	404	571 90	347	313 15	44	90 35	.....	.....	52
3	5 45	2,262	4,438 41	1,041	1,450 95	1,502	1,552 70	242	570 45	6	17 15	53
3	6 45	423	839 55	266	380 35	299	293 00	63	159 95	3	7 25	54
....	.....	201	384 55	49	69 50	101	93 10	11	21 95	2	5 85	55
....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56
....	.....	442	900 10	99	149 80	185	169 50	25	52 15	.....	.....	57
....	.....	4,031	8,786 95	3,453	4,940 30	3,227	3,117 75	3	7 35	149	497 50	58
....	.....	3,913	8,440 30	3,347	4,790 50	3,600	3,478 30	752	1,720 60	29	96 60	59
1	2 00	680	1,344 35	299	408 30	448	432 45	99	268 60	2	5 50	60
....	.....	1,476	3,119 20	983	1,349 40	1,172	1,086 65	198	489 25	5	16 80	61
2	10 80	2,542	4,988 63	1,103	1,568 00	1,177	1,181 25	156	338 55	15	33 80	62
....	.....	500	923 20	273	361 55	400	346 55	95	186 35	1	2 00	63
....	.....	771	1,568 95	478	671 00	556	569 00	101	246 40	4	14 35	64
1	1 70	3,729	7,651 80	2,797	4,016 15	2,618	2,572 43	283	598 45	24	66 95	65
....	.....	3,391	7,223 01	1,863	2,707 34	1,407	1,446 85	233	492 95	1	4 05	66
....	.....	665	1,336 00	306	428 45	405	411 30	80	207 65	1	2 60	67
80	167 05	64,461	122,573 09	35,510	49,854 35	40,940	39,864 46	6,791	15,693 85	930	2,426 80	

Fees and Emoluments received by the Registrars

Schedule A.—*Continued.*

Number.	Name of Registrar.	Abstracts.		Searches.		Mechanics' Liens.		All other instruments registered.	
		Number.	Fees for same.	Number.	Fees for same.	Number.	Fees for same.	Number.	Fees for same.
		18	19	20	21	22	23	24	25
			$ c.		$ c.		$ c.		$ c.
1	C. F. Farwell H. G. Moorhouse	119	171 80	1,781	571 25	12	3 40	256	466 65
2	Alex. Graham	60	107 55	1,651	501 80	7	4 30	232	369 50
3	Wm. H. McFarlane	780	653 60	909	309 55	.....	.....	225	308 70
4	Miss L. Coffey, Dep. Regt	179	291 60	1,156	542 80	3	1 75	270	477 50
5	D. J. Hunter	148	210 45	511	189 95	1	25	109	170 35
6	R. J. Dillen	22	29 70	140	39 75	.....	.....	93	135 75
7	W. H. Scott	96	163 10	226	114 60	2	75	49	79 70
8	Samuel Pollard	102	164 20	221	103 13	.....	.....	87	137 90
9	J. H. Coyne	120	236 00	1,874	496 70	5	1 25	308	504 35
10	J. O. Reaume	138	320 35	4,126	1,613 95	44	11 55	936	1,505 95
11	J. E. Swinburne	206	252 55	1,676	674 80	1	1 00	260	368 60
12	W. J. Gibson	108	132 85	552	247 05	2	60	82	134 85
13	J. A. McRae	35	60 41	375	144 23	.....	.....	.....	.....
14	W. S. Johnston	13	36 15	217	106 30	.....	.....	52	221 05
15	G. P. Creighton	216	214 80	731	268 70	1	1 50	117	210 50
16	A. H. Jackson	310	242 45	388	96 40	.....	.....	144	233 30
17	P. R. Howard	182	165 00	262	128 30	1	25	158	247 10
18	E. C. Young	86	83 80	191	52 70	.....	.....	23	46 45
19	Victor Chisholm	348	227 90	758	485 35	2	50	93	168 15
20	Samuel Russell	587	956 35	1,492	417 20	21	6 30	316	526 95
21	W. Coats	718	664 85	926	262 35	.....	.....	247	350 45
22	J. P. Gildersleeve	34	57 35	805	329 90	4	2 00	101	158 30
23	Arthur Dunn	127	172 78	1,366	641 30	13	3 75	750	1,264 89
24	C. W. Chadwick	6	3 65	33	14 30	.....	.....	14	20 00
25	A. MacLean	151	100 35	1,560	739 33	9	2 25	275	464 45
26	H. C. Bowland	50	35 30	529	149 50	.....	.....	64	101 70
27	James Armour	93	75 40	329	185 40	.....	.....	82	158 10
28	J. T. Gallagher	97	170 05	1,205	319 15	1	25	137	227 60
29	G. S. Reid	49	129 20	669	195 55	.....	.....	81	137 65
30	C. E. Fisher	389	702 85	1,390	875 70	6	2 00	275	464 55
31	R. H. Dignan	22	78 10	1,029	385 80	6	1 50	218	304 20
32	W. R. Abrey	52	43 90	176	90 95	.....	.....	33	56 75
33	J. H. Marshall	18	96 40	157	50 15	8	2 50	193	301 10
34	Richard Dunlop	170	308 05	318	163 30	1	25	136	222 40
35	J. E. Lount	127	125 05	606	260 50	2	50	98	189 15
36	W. M. McGuire	126	224 15	1,209	360 30	1	25	225	360 25
37	A. G. Willoughby	321	381 45	161	60 15	.....	.....	122	205 70
38	H. McCullough	132	285 65	308	107 60	1	75	80	105 35
39	J. M. Deacon	74	88 45	613	157 15	5	1 50	70	84 05
40	G. W. Dryden	211	416 00	774	251 45	6	1 50	225	368 75
41	J. P. Fisher	387	336 55	2,405	601 25	18	4 50	516	825 60
42	G. R. Pattulo	106	626 50	1,378	359 65	6	3 50	301	439 20
43	Charles Gillespie	67	118 75	859	214 95	1	25	75	125 00
44	F. J. Jackson	58	82 30	106	64 40	6	1 50	112	129 50
45	James Steele	218	229 80	759	197 45	5	1 25	159	242 35
46	H. F. Sharp	145	122 95	277	69 25	.....	.....	158	111 55
47	B. Morrow	101	189 95	1,289	703 85	3	7 41	263	541 61
48	F. W. Thistlethwaite	89	161 70	338	152 30	.....	.....	142	248 00
49	Walter MacKenzie	46	68 70	412	143 20	.....	.....	119	206 70
50	W. J. Keating	2	4 00	3	75	.....	.....	41	45 00
51	R. A. Campbell	304	240 20	834	208 50	2	1 00	236	398 00
52	John A. Gamble	181	423 80	140	70 05	1	50	34	48 45
53	R. J. Sanderson	601	1,215 20	1,693	632 25	4	2 50	455	746 50
54	J. C. Alguire	89	149 45	720	236 70	13	3 25	105	152 20
55	Stephen Fournier	90	76 72	249	122 80	19	4 75	112	169 43
56	W. H. Lewis	.....	.....	.....	.....	.....	.....	46	47 90
57	J. M. Munro	80	201 10	510	291 95	3	1 50	157	259 85
58	Peter Ryan	547	1,324 70	7,549	3,102 25	97	33 25	2,505	3,245 65
59	R. H. Bowes	456	1,000 45	7,911	3,600 20	81	26 20	2,316	3,328 85
60	C. D. Barr	48	122 70	1,105	308 35	2	50	117	204 25
61	Oscar S. Eby	145	203 50	817	368 75	29	7 25	324	474 50
62	J. C. Crow	795	1,227 76	2,333	710 55	34	16 25	471	810 38
63	James Tucker	239	297 70	158	99 90	.....	.....	124	154 75
64	Henry Hortop	86	143 20	1,266	480 00	5	1 25	223	358 45
65	R. K. Hope	976	1,665 70	6,059	2,310 55	57	24 28	1,315	2,092 60
66	W. J. Hill	195	543 90	5,611	2,195 15	45	21 03	1,191	2,146 60
67	J. D. McKay	100	185 35	589	320 03	3	75	187	315 00
	Totals	13,303	19,053 23	78,776	30,172 57	602	214 56	18,891	29,689 16

of Deeds for the Province of Ontario, etc.—Continued.

Schedule A.—*Continued.*

Amount received for work done for municipalities. 26	From other sources not enumerated. 27	Fees earned and not received. 28	Fees earned in Land Titles Office. 29	Fees earned in Registry Office. 30	Gross amount of fees earned for the year 1918. 31	Gross amount for 1917. 32	Gross amount for 1916. 33	Number.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	42 65	.....	.....	.....	4,306 71	3,422 10	3,085 82	1
.....	30 80	70 30	.....	.....	6,086 15	4,212 35	3,529 85	2
.....	89 55	600 11	.....	.....	6,064 05	4,575 20	4,406 03	3
.....	58 80	20 65	.....	.....	4,879 65	4,139 36	1,610 60	4
.....	60 05	.....	.....	.....	2,470 65	1,682 25	1,886 95	5
.....	20 20	.....	.....	.....	1,854 20	1,241 10	1,282 30	6
.....	25 00	.....	.....	.....	1,445 25	1,036 05	1,018 55	7
.....	.....	91 50	.....	.....	1,301 82	958 13	1,095 03	8
314 79	101 80	17 00	.....	.....	5,954 05	4,675 27	4,672 70	9
451 00	254 75	17 55	.....	.....	15,016 95	12,634 85	12,679 00	10
.....	195 25	.....	1,171 87	3,329 72	*4,801 59	‡ 1,485 80	.....	11
.....	.....	274 80	.....	.....	2,612 90	1,882 98	1,175 50	12
370 85	173 08	143 45	.....	.....	1,672 85	1,414 35	1,232 55	13
.....	.....	.....	.....	.....	1,878 65	1,399 80	1,203 10	14
.....	67 45	780 72	.....	.....	3,591 50	3,069 15	2,908 00	15
.....	67 25	568 53	.....	.....	2,891 75	2,362 85	2,199 45	16
.....	30 48	314 00	.....	.....	2,212 93	1,936 60	2,473 15	17
9 85	45 70	.....	.....	.....	742 95	908 71	491 25	18
.....	136 65	287 73	.....	.....	3,332 00	3,089 40	2,562 40	19
.....	47 05	565 63	.....	.....	6,926 75	5,675 48	4,504 15	20
.....	.....	1,127 85	.....	.....	6,118 10	4,450 37	4,316 90	21
39 65	.....	.....	.....	.....	2,311 35	1,823 05	1,612 82	22
.....	128 55	721 42	.....	.....	7,943 37	8,148 85	6,602 16	23
.....	3 50	.....	1,145 49	194 25	*1,339 74	‡ 223 05	‡ 216 60	24
.....	83 90	580 00	.....	.....	7,356 61	5,596 09	5,379 56	25
.....	7 95	.....	.....	.....	1,369 25	1,005 70	967 75	26
.....	.....	.....	.....	.....	2,097 80	1,523 15	1,336 90	27
.....	55 35	20 50	.....	.....	3,479 70	2,451 67	2,707 15	28
.....	122 95	11 65	.....	.....	2,403 10	1,774 15	1,658 85	29
42 55	80 30	482 82	.....	.....	6,770 80	5,786 85	5,792 22	30
.....	49 25	.....	.....	.....	4,138 05	3,215 40	3,278 05	31
.....	‡83 45	.....	47 50	1,215 52	*1,263 02	‡ 857 49	‡ 683 10	32
.....	.....	.....	.....	.....	4,480 68	3,406 97	3,368 09	33
.....	77 05	160 00	.....	.....	2,618 65	1,673 25	1,478 80	34
.....	81 25	76 50	1,192 76	2,021 10	*3,215 86	‡ 1,593 90	‡ 1,391 83	35
.....	37 00	.....	.....	.....	3,652 55	2,873 40	3,026 60	36
.....	102 35	105 62	.....	.....	2,548 75	2,155 71	1,959 20	37
.....	14 00	56 95	.....	.....	1,375 15	1,143 25	1,154 20	38
.....	.....	.....	1,599 12	1,201 80	†2,800 92	‡ 807 15	‡ 1,064 92	39
.....	174 40	.....	.....	.....	5,048 93	3,767 85	3,970 84	40
721 55	920 15	.....	.....	.....	6,864 30	5,736 25	6,436 64	41
.....	76 25	.....	.....	.....	5,806 65	4,530 20	4,915 95	42
.....	131 60	65 86	.....	.....	1,844 50	1,287 70	1,100 95	43
4 00	20 25	84 00	.....	.....	2,212 35	1,834 40	1,821 20	44
.....	77 15	.....	.....	.....	4,241 95	3,225 30	3,153 50	45
.....	.....	.....	.....	.....	1,743 60	1,267 65	1,371 15	46
.....	135 45	.....	.....	.....	5,173 47	3,838 72	3,132 86	47
.....	127 10	.....	.....	.....	2,770 60	2,436 20	2,231 40	48
.....	32 30	99 50	.....	.....	1,945 65	1,277 50	1,338 45	49
.....	5 25	.....	2,294 80	59 70	*2,354 50	‡ 33 35	‡ 34 50	50
.....	150 30	17 30*	.....	.....	5,019 20	3,997 85	3,255 20	51
9 90	259 15	.....	.....	.....	2,700 05	2,195 80	2,833 15	52
.....	53 30	526 39	.....	.....	10,684 86	7,505 86	6,940 38	53
.....	153 00	89 35	.....	.....	2,381 15	1,775 47	1,799 35	54
.....	13 90	.....	3,336 31	962 56	*4,298 87	* 3,730 94	* 3,726 55	55
.....	.....	.....	*7,141 12	47 30	*7,489 02	‡ 65 00	‡ 46 00	56
.....	53 20	57 85	*1,044 10	2,079 15	*3,123 25	* 5,981 69	* 7,951 54	57
.....	.....	.....	.....	.....	24,965 70	18,625 75	16,363 80	58
810 05	.....	.....	.....	.....	26,482 00	19,952 55	18,302 20	59
.....	68 30	65 90	.....	.....	3,166 30	2,443 50	2,524 10	60
.....	38 65	630 00	.....	.....	7,153 95	5,793 80	5,662 75	61
.....	140 00	1,039 99	.....	.....	11,025 97	9,090 86	7,858 90	62
.....	.....	.....	.....	.....	2,149 75	1,807 70	1,980 36	63
.....	62 05	.....	.....	.....	4,115 15	2,907 85	2,821 75	64
.....	27 00	1,177 08	.....	.....	21,000 61	17,246 32	11,515 45	65
993 95	154 50	.....	.....	.....	16,955 38	12,844 30	11,219 79	66
.....	.....	.....	.....	.....	3,207 73	2,216 35	2,145 79	67
3,768 14	5,155 43	10,978 63	19,573 07	12,111 70	343,562 80	256,640 69	239,451 26	

* Fees of Land Titles Office included—8 Geo. V., Cap. 27, Sec. 20; also R.S.O. Cap. 124, Sec. 109 and 4 Geo. V. Chap. 23, Sec. 5.
† Includes the fees of Land Titles and Registry Office, all of which are remitted monthly to Provincial Treasurer.
‡ Fees of Land Titles Office not included.

Fees and Emoluments received by the Registrars

Schedule A.—*Continued.*

Number.	Name of Registrar.	Amount paid Senior Deputy.	Amount paid Junior Deputy.	Other charges in connection with office.	Surplus to municipality or the Province under sec. 101, cap. 124, R.S.O.		
					Amount for 1918.	When paid.	Amount for 1917.
		34	35	36	36	37	40
		$ c.	$ c.	$ c.	$ c.		$ c.
1	C. F. Farwell	777 50		543 35	295 75	Feb. 20, 1919	
	H. J. Moorhouse						
2	Alex. Graham			1,828 00	929 08	Feb. 7, 1919	511 43
3	Wm. H. McFarlane	1,250 00		796 49	808 78	Jan. 14, 1919	602 82
4	Miss L. Coffey, Dep. Reg	1,282 50		295 65	450 75	Jan. 10, 1919	388 43
5	D. J. Hunter	870 00		246 17			
6	R. J. Dillen	550 00		12 00			
7	W. H. Scott	540 00					
8	Samuel Pollard	400 00		30 00			
9	James H. Coyne	764 80		398 42	1,195 42	Jan. 14, 1919	848 51
10	J. O. Reaume	1,825 00		3,168 08	5,421 48	Jan. 15, 1919	4,596 77
11	J. E. Swinburne	*775 00		*888 33	369 13	Jan. 9, 1919	
12	W. J. Gibson	585 00		292 00	23 59	Jan. 8, 1919	
13	J. A. McRae	500 00		12 00			
14	W. S. Johnston	200 00		19 00	15 96	Jan. 14, 1919	
15	Geo. P. Creighton	450 00		652 00	147 90	Jan. 9, 1919	89 58
16	Arthur H. Jackson	440 00		405 30	59 29	Jan. 15, 1919	
17	P. R. Howard	780 00		191 50			
18	E. C. Young	35 00					
19	Victor Chisholm	463 00		424 00	139 00	Jan., 1919	125 98
20	S. Russell	1,500 00		942 40	1,042 18	Jan. 13, 1919	1,128 49
21	W. Coats	800 00		639 80	1,139 15	Jan. 3, 1919	592 08
22	J. P. Gildersleeve	390 03		46 76	37 45	Jan. 14, 1919	
23	Arthur J. Dunn	1,233 35		1,500 50	1,404 76	Jan. 22, 1919	2,474 19
24	C. W. Chadwick			*822 05			
25	A. MacLean	901 00		2,352 50	841 55	Jan. 14, 1919	905 09
26	H. C. Bowland	72 00					
27	J. Armour	500 00			9 78	Jan. 10, 1919	
28	J. T. Gallagher	900 00		255 15	82 45	Jan. 8, 1919	20 09
29	G. S. Reid	600 00		89 50	21 36	Jan. 15, 1919	
30	C. E. Fisher	312 00	748 00	972 85	1,168 98	Jan. 17, 1919	1,246 91
31	R. H. Dignan	392 00		24 00	661 02	Jan. 14, 1919	310 07
32	W. R. Abrey	* 300 00		* 20 50			
33	J. H. Marshall	1,000 00		540 00	282 20	Jan. 13, 1919	200 90
34	R. Dunlop	325 00	225 00	12 00	61 33	Jan. 10, 1919	
35	J. E. Lount	‡1,250 00		86 00	37 78		
36	Wm. M. McGuire	1,078 00		529 00	55 11	Jan. 4, 1919	
37	A. G. Willoughby	520 00		112 00	41 68	Jan. 14, 1919	4 87
38	Hugh McCullough	240 00					
39	J. M. Deacon	§ 720 00		§ 4,306 60			
40	G. W. Dryden	1,040 00		595 50	506 72	Jan. 22, 1919	267 25
41	J. P. Fisher	1,776 85		639 50	1,023 98	Jan. 9, 1919	1,049 16
42	G. R. Pattullo	1,000 00		1,106 25	650 00	Jan. 15, 1919	682 98
43	Chas. Gillespie			223 00	12 15	Jan. 2, 1919	
44	F. J. Jackson	960 00		16 00			
45	James Steele	728 00		227 55	129 70	Jan. 15, 1919	190 04
46	H. F. Sharp	520 00					
47	B. Morrow	1,360 00		437 00	488 24	Jan. 6, 1919	319 83
48	F. W. Thistlethwaile	670 00		277 00	32 36	Jan. 7, 1919	17 42
49	Walter MacKenzie	675 00		75 00			
50	W. J. Keating	591 00			26 35	Jan. 11, 1919	
51	R. A. Campbell	738 00		807 00	537 10	Jan. 14, 1919	412 98
52	J. A. Gamble	750 00		15 00	43 50	Jan. 2, 1919	23 08
53	R. J. Sanderon	1,500 00	858 00	2,217 69	1,900 05	Jan. 13, 31, 1919	1,662 48
54	J. C. Alguire	514 00	300 00	15 00	5 21	Jan. 8, 1919	
55	Stephen Fournier	* 1,080 00		540 00	203 66	Jan. 7, 1919	72 18
56	W. H. Lewis			*3,480 00	804 51	Jan. 2, 1919	
57	John M. Munro	* 982 40		* 16 45	74 88	Jan. 1919	672 57
58	Peter Ryan	2,760 00	1,755 80	8,607 80	7,057 89	Jan. 15 and Feb. 12, 1919	3,103 88
59	R. H. Bowes	1,400 00	3,023 60	10,288 85	6,992 60	Jan. 17 and Mar. 11, 1919	1,705 07
60	C. D. Barr	700 00		527 60	43 87	Jan. 14, 1919	
61	Oscar S. Eby	1,800 00		1,558 55	697 70	Dec. 31, 1918	1,008 46
62	J. C. Crow	1,200 00	624 00	2,076 82	2,812 64	Jan. 27, 1919	2,787 23
63	James Tucker	600 00		424 00			
64	Henry Hortop	503 00	424 00	53 00	367 57	Jan. 8, 1919	65 57
65	R. K. Hope	3,230 80	1,120 00	4,855 00	7,015 33	Jan. 14, 1919	4,455 28
66	Wm. J. Hill	2,080 00		5,116 82	5,164 71	Jan. 9, 1919	3,966 49
67	James D. McKay	528 00		180 11	149 92	Jan. 14, 1919	4 72

* For Land Titles and Registry Offices. ‡ $750.00 of which is for Registry Office and $500.00 for Land Titles.
§ The salaries and expenses of Land Titles and Registry Offices are paid by the Province. O-in-C. 31st Oct. 1914.
- Land Titles only—no Deputy Registrar.

Of Deeds for the Province of Ontario, etc.— *Continued.*

Schedule A.— *Continued.*			Schedule B.							
Net amount to Registrar.			Number and aggregate amount of mortgages registered.							
Amount for 1918.	Amount for 1917.	Amount for 1916.	For nominal consideration or amount not specified.	For $1,000 or under.	Over $1,000 and not exceeding $2,000.	Over $2,000 and not exceeding $5,000.	Over $5,000.	Total number.	Aggregate amount.	Number.
41	41a	41b	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
$ c.	$ c.	$ c.							$ c.	
2,690 11	2,127 60	1,809 07	7	169	90	16	8	320	504,477 74	1
3,329 07	2,340 92	1,958 00	6	354	271	142	31	804	1,981,919 15	2
3,208 78	2,244 16	2,173 57	13	195	152	220	24	604	1,263,189 73	3
2,850 75	1,923 76	1,748 50	5	168	106	109	34	422	966,442 37	4
1,354 48	907 47	1,081 08	3	67	18	98	22	238	527,841 03	5
1 292 20	679 10	712 30	2	56	57	79	20	214	556,930 00	6
905 25	616 05	983 55	.....	49	26	29	9	113	234,499 14	7
871 83	741 43	655 03	2	28	21	32	11	94	235,845 67	8
3,595 41	2,728 40	2,715 08	3	271	170	160	35	642	1,228,930 13	9
4,602 39	3,292 83	3,580 77	10	529	133	328	83	1,383	2,901,610 66	10
2,769 13	853 94	.....	6	82	35	17	6	146	313,677 98	11
1,712 31	999 98	1,318 50	.....	111	62	87	19	279	589,587 08	12
1,160 85	966 10	789 53	.....	98	65	51	9	223	388,028 77	13
1,643 69	1,180 80	984 10	.....	78	60	37	6	181	287,806 00	14
2,341 60	1,731 82	1,797 18	5	86	118	117	18	344	690,884 58	15
1,987 16	1,207 76	1,095 70	2	89	102	106	20	319	689,005 82	16
1,341 43	782 91	1 289 75	3	103	73	67	9	165	261,582 00	17
707 95	783 71	361 70	1	38	14	4	.....	57	17,515 00	18
2,306 00	1,981 62	1,500 00	6	73	81	101	42	303	979,744 22	19
3,442 17	2,486 01	1,944 21	5	312	151	133	31	632	951,379 00	20
3,539 15	2,366 24	2,216 06	8	171	165	270	39	653	1,566,437 00	21
1,837 11	1,343 53	1 109 90	.....	114	97	53	12	276	475,556 00	22
3,804 76	2,964 66	2 593 89	3	361	212	192	98	869	1,903,562 33	23
517 69	111 13	108 80	.....	13	1	2	.....	16	13,330 00	24
3,241 56	1,650 00	1,696 91	6	283	271	225	43	828	1,665,691 54	25
1,297 25	935 70	955 75	5	19	22	9	106	161	169,332 25	26
1,588 02	1,323 45	1 136 90	10	103	76	69	1	262	428,460 90	27
2,242 10	1,680 88	1,543 84	5	145	102	72	16	340	625,140 77	28
1,692 24	1,094 65	765 35	.....	96	56	61	7	220	398,865 78	29
3,568 97	2,658 41	2,773 82	2	196	221	164	34	617	1,164,652 20	30
3,061 03	2,507 73	2 528 11	1	239	174	96	19	529	853,124 38	31
942 52	536 99	362 60	.....	74	25	14	2	115	149,971 50	32
2,658 48	2,028 07	1,918 03	.....	163	132	230	40	565	1,763,247 00	33
1,995 32	1,111 25	916 80	.....	69	56	63	11	199	413,894 00	34
1,850 08	993 90	791 83	.....	63	8	8	2	81	56,534 47	35
1,970 44	1,451 10	1,513 75	4	172	87	82	21	366	756,317 00	36
1,875 07	1,513 84	1,402 20	8	96	70	67	7	248	120,560 00	37
1,135 15	758 25	720 70	.....	46	22	28	11	107	305,944 75	38
*3,000 00	* 3,000 00	* 3,000 00	7	52	23	27	2	111	168,554 30	39
2,906 71	1,832 10	1,925 52	4	193	140	107	34	478	960,591 42	40
3,423 97	2,214 89	2,096 07	1	221	139	214	80	646	2,161,744 12	41
3,050 40	2,515 45	2,530 30	5	181	193	179	105	663	1,555,579 00	42
1,619 35	871 70	990 95	.....	66	22	18	2	108	136,085 00	43
1,236 35	858 40	846 00	.....	86	75	89	23	273	735,650 00	44
2,829 70	2,129 96	2,075 24	4	175	184	185	31	579	1,308,953 59	45
1,223 60	747 65	854 15	3	62	85	39	19	208	165,250 00	46
2,888 23	2,022 89	1,401 86	3	189	120	116	17	445	787,018 25	47
1,791 24	1,656 78	1,508 46	.....	158	84	93	29	364	869,407 98	48
1,195 65	656 80	645 05	.....	61	42	69	17	192	443,626 08	49
1,737 15	33 35	34 50	.....	.....	.....	.....	.....	.....	.....	50
2,937 10	2,204 32	1 941 15	23	248	108	101	40	520	1,174,932 80	51
1,891 55	1,707 72	1,728 80	4	125	67	80	28	304	678,581 15	52
4,211 12	1,591 28	1,500 00	12	195	223	250	60	1,040	1,962,214 80	53
1,546 91	1,107 43	1 232 11	1	134	55	58	18	266	484,005 19	54
2,475 21	2,038 76	2 179 24	2	19	14	8	4	47	109 915 99	55
3,204 51	65 00	46 00	.....	.....	.....	.....	.....	.....	.....	56
2,069 52	3,072 57	2 495 84	7	41	26	8	8	93	302,878 49	57
4,784 21	4,341 87	3,881 40	9	816	1,508	895	222	3,450	8,335,253 00	58
1,776 95	4,105 08	3,674 10	16	912	1,283	945	190	3,346	7,808,157 00	59
,894 83	1,215 90	1,496 50	2	123	76	80	18	299	574,047 70	60
3,097 70	1,868 44	1,816 30	10	329	317	268	59	983	2,006,053 12	61
4,312 51	2,900 89	2,392 80	7	451	395	220	29	1,102	1,690,606 00	62
1,425 75	895 70	1,023 36	.....	65	90	99	19	273	608,761 92	63
2,767 58	2,012 28	1,931 61	9	173	114	137	45	478	1,084 550 50	64
4,779 48	1,495 04	4,257 94	23	1,280	822	549	119	2,797	6,293,547 00	65
4,573 85	2,417 14	1,514 30	.....	948	527	281	107	1,863	4,470,384 00	66
2,349 70	1,542 51	1,390 89	.....	126	83	78	19	306	612,033 95	67
160,326 68	111,655 63	103,783 52	383	13,050	10,768	8,861	2,251	35,142	76,178,509 89	

* Salary paid to Mr. Deacon by the Province O-in-C, 31st Oct., 1914.

SCHEDULE C

Shewing the Earnings, Disbursements, and Net Incomes of the Registrars of Deeds for the year ending December 31st, 1918, and the sums payable under Section 101 of The Registry Act

No.	Registry Division	Where Office Situate	Registrar	Gross Earnings	Disbursements	Net Income	Percentage under Sec. 101	Net for Registrar	No.
				$ c.	$ c.	$ c.	$ c.	$ c.	
1	Algoma	Sault Ste. Marie	*C. F. Farwell	1,555 15	577 55	977 69	295 75	2,690 11	1
			H. J. Moorehouse	2,751 56	743 30	2,008 26			
2	Brant	Brantford	A. Graham	6,086 15	1,828 00	4,258 15	929 08	3,329 07	2
3	Bruce	Walkerton	W. H. McFarlane	6,064 05	2,046 49	4,017 56	808 78	3,208 78	3
4	Carleton	Ottawa	†Miss Coffey, Deputy	4,879 65	1,578 15	3,301 50	450 75	2,850 75	4
5	Dufferin	Orangeville	D. J. Hunter	2,470 65	1,116 17	1,354 48		1,354 48	5
6	Dundas	Morrisburg	R. J. Dillen	1,854 20	562 00	1,292 20		1,292 20	6
7	Durham E.	Port Hope	Wm. H. Scott	1,445 25	540 00	905 25		905 25	7
8	Durham W	Bowmanville	S. Pollard	1,301 83	430 00	871 83		871 83	8
9	Elgin	St. Thomas	J. H. Coyne	5,954 05	1,163 22	4,790 83	1,195 42	3,595 41	9
10	Essex	Sandwich	J. O Reaume	15,016 95	4,993 08	10,023 87	5,421 48	4,602 39	10
11	Fort William	Fort William	J. E. Swinburne	¶4,801 59	1,663 33	3,138 26	369 13	2,769 13	11
12	Frontenac	Kingston	W. J. Gibson	2,612 90	877 00	1,735 90	23 59	1,712 31	12
13	Glengarry	Alexandria	J. A. McRae	1,672 85	512 00	1,160 85		1,160 85	13
14	Grenville	Prescott	W. S. Johnston	1,878 65	219 00	1,659 65	15 96	1,643 69	14
15	Grey N.	Owen Sound	‡R. McKnight	3,591 50	1,102 00	2,489 50	147 90	2,341 60	15
			Geo. P. Creighton						
16	Grey S	Durham	Miss Davidson, Deputy	728 25	171 64	556 61	59 29	1,987 16	16
			≷A. H. Jackson	2,163 50	673 66	1,489 84			
17	Haldimand	Cayuga	P. R. Howard	2,312 93	971 50	1,341 43		1,341 43	17
18	Haliburton	Minden	E. C. Young	742 95	35 00	707 95		707 95	18
19	Halton	Milton	V. Chisholm	3,332 00	887 00	2,445 00	139 00	2,306 00	19
20	Hastings	Belleville	S. Russell	6,926 75	2,442 40	4,484 35	1,042 18	3,442 17	20
21	Huron	Goderich	W. Coats	6,118 10	1,439 80	4,678 30	1,139 15	3,539 15	21
22	Kingston	Kingston	J. P. Gildersleeve	2,311 35	436 79	1,874 56	37 45	1,837 11	22
23	Kent	Chatham	A. J. Dunn	7,943 37	2,733 85	5,209 52	1,404 76	3,804 76	23
24	Kenora	Kenora	C. W. Chadwick	¶1,339 74	822 05	517 69		517 69	24
25	Lambton	Sarnia	A. MacLean	7,336 61	3,253 50	4,083 11	841 55	3,241 56	25
26	Lanark N	Almonte	H. C. Bowland	1,369 25	72 00	1,297 25		1,297 25	26
27	Lanark S.	Perth	Jas. Armour	2,097 80	500 00	1,597 80	9 78	1,588 02	27
28	Leeds	Brockville	J. T. Gallagher	3,479 70	1,155 15	2,324 55	82 45	2,242 10	28
29	Lennox and Addington	Napanee	G. S. Reid	2,403 10	689 50	1,713 60	21 36	1,692 24	29
30	Lincoln	St. Catharines	C. E. Fisher	6,770 80	2,032 85	4,737 95	1,168 98	3,568 97	30
31	London	London	R. H. Dignan	4,138 05	416 00	3,722 05	661 02	3,061 03	31

32	Manitoulin	Gore Bay	W. R. Abrey	¶1,263 02	320 50	942 52	.....	942 52	32
33	Middlesex E. & N.	London	Jas. H. Marshall	4,480 68	1,540 00	2,940 68	282 20	2,658 48	33
34	Middlesex W.	Glencoe	R. Dunlop	2,618 65	562 00	2,056 65	61 33	1,995 32	34
35	Muskoka	Bracebridge	J. E. Lount	¶3,213 86	1,336 00	1,877 86	37 78	1,850 08	35
36	Norfolk	Simcoe	W. M. McGuire	3,632 55	1,607 00	2,025 55	55 11	1,970 44	36
37	Northumberland E.	Colborne	A. G. Willoughby	2,548 75	632 00	1,916 75	41 68	1,875 07	37
38	Northumberland W	Cobourg	H. McCullough	1,375 15	240 00	1,135 15	.....	1,135 15	38
39	Nipissing	North Bay	**J. M. Deacon	2,800 92	4,426 60	.....	..... ‡‡	3,000 00	39
40	Ontario	Whitby	G. W. Dryden	5,048 93	1,635 50	3,413 43	506 72	2,906 71	40
41	Ottawa	Ottawa	J. P. Fisher	6,864 30	2,416 35	4,447 95	1,023 98	3,423 97	41
42	Oxford	Woodstock	G. R. Pattullo	5,806 65	2,106 25	3,700 40	650 00	3,050 40	42
43	Parry Sound	Parry Sound	C. Gillespie	1,844 50	223 00	1,621 50	12 15	1,619 35	43
44	Peel	Brampton	F. J. Jackson	2,212 35	976 00	1,236 35	.....	1,236 35	44
45	Perth N	Stratford	Jas. Steele	4,214 95	955 55	3,259 40	429 70	2,829 70	45
46	Perth S.	St. Marys	H. F. Sharp	1,743 60	520 00	1,223 60	.....	1,223 60	46
47	Peterborough	Peterborough	B. Morrow	5,173 47	1,797 00	3,376 47	488 24	2,888 23	47
48	Prescott	L'Orignal	F. W. Thistlethwaite	2,770 60	947 00	1,823 60	32 36	1,791 24	48
49	Prince Edward	Picton	W. MacKenzie	1,945 65	750 00	1,195 65	.....	1,195 65	49
50	Rainy River	Fort Frances	W. J. Keating	¶2,354 50	591 00	1,763 50	26 35	1,737 15	50
51	Renfrew	Pembroke	R. A. Campbell	5,019 20	1,545 00	3,474 20	537 10	2,937 10	51
52	Russell	Russell	Jno. A. Gamble	2,700 05	765 00	1,935 05	43 50	1,891 55	52
53	Simcoe	Barrie	‖ R. J. Sanderson	10,684 86	4,573 69	6,111 17	1,900 05	4,211 12	53
54	Stormont	Cornwall	J. C. Alguire	2,381 15	829 00	1,552 15	5 21	1,546 94	54
55	Sudbury	Sudbury	S. Fournier	¶4,298 87	1,620 00	2,678 87	203 66	2,475 21	55
56	Temiskaming	Haileybury	W. H. Lewis	¶7,489 02	3,480 00	4,009 02	804 51	3,204 51	56
57	Thunder Bay	Port Arthur	J. M. Munro	¶3,123 25	998 85	2,124 40	74 88	2,069 52	57
58	Toronto E.	Toronto	Peter Ryan	24,965 70	13,123 60	11,822 10	7,057 89	4,784 21	58
59	Toronto W.	Toronto	R. H. Bowes	26,482 00	14,712 45	11,769 55	6,992 60	4,776 95	59
60	Victoria	Lindsay	C. D. Barr	3,166 30	1,227 60	1,938 70	43 87	1,894 83	60
61	Waterloo	Kitchener	O. S. Eby	7,153 95	3,358 55	3,795 40	697 70	3,097 70	61
62	Welland	Welland	J. C. Crow	11,025 97	3,900 82	7,125 15	2,812 64	4,312 51	62
63	Wellington N	Arthur	Jas. Tucker	2,449 75	1,024 00	1,425 75	.....	1,425 75	63
64	Wellington S. & C.	Guelph	H. Hortop	4,115 15	980 90	3,135 15	367 57	2,767 58	64
65	Wentworth	Hamilton	R. K. Hope	21,000 61	9,205 80	11,794 81	7,015 33	4,779 48	65
66	York E. & W.	Toronto	W. J. Hill	16,935 38	7,196 82	9,738 56	5,164 71	4,573 85	66
67	York N.	Newmarket	J. D. McKay	3,207 73	708 11	2,499 62	149 92	2,349 70	67

*Mr. Farwell resigned and Mr. Moorehouse appointed by O. in C. 11th June.
†Senior Deputy. See sec. 14 of the Registry Act.
‡Died 19th June. Mr. Creighton appointed by O. in C. 28th August.
‡‡Appointed by O. in C. 27th March.
¶Land Titles office included, 8 Geo. V. cap. 27, sec. 20,
**Fees of Registry and Land Titles offices are remitted monthly by Mr. Deacon to the Provincial Treasurer. Mr. Deacon and staff receive a salary, O. in C. 31st Oct., 1914.
‖Appointed by O. in C. 26th March. ‡‡Salary of Registrar O. in C. 31st Oct., 1914.

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TWENTY-SECOND ANNUAL REPORT

OF THE

Provincial Municipal Auditor

FOR

1918

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:

Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty

1919

Printed by
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To His Honour Sir John Strathearn Hendrie, K.C.M.G., C.V.O.

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

I have the honour to present to you the report of the Provincial Municipal Auditor for the year 1918.

Wm. David McPherson,

Provincial Secretary.

Parliament Buildings,
Toronto, January, 1919.

PARLIAMENT BUILDINGS,

Toronto, January, 1919.

TO THE HONOURABLE W. D. MCPHERSON, K.C., M.P.P.,
Provincial Secretary of the Province of Ontario.

SIR,—I have the honour to present to you my report for the year 1918.

I have the honour to be,

Sir,

Your obedient servant,

J. W. SHARPE,
Provincial Municipal Auditor.

Report of the Provincial Municipal Auditor

Toronto, January, 1919.

To the Honourable W. D. McPherson, K.C., M.P.P.,

Provincial Secretary of the Province of Ontario.

Sir,—I have the honour to present to you the Twenty-second Annual Report of the Provincial Municipal Auditor.

Townships of Korah and North Gwillimbury and the Town of Petrolia.

The audits in these Municipalities, which were referred to in my last report have been completed and the report in each case is submitted herewith.

Township of Charlottenburg.

The request for an audit in this Municipality was referred to in my last report. An Order in Council bearing date 22nd February, 1918, confirmed the appointment of Mr. Oscar Hudson, of Toronto, C.A., to make the necessary investigation and report. Mr. Hudson's report was received on the 11th April, 1918, and is submitted herewith.

Town of Midland.

On April 16th, 1918, a copy of resolution of the Town Council of Midland was received, asking for an audit of the financial affairs of the Town. On 23rd April, 1918, an Order in Council was passed confirming the appointment of Mr. Oscar Hudson, C.A., of the City of Toronto, to make the necessary examination and report. On 12th September, 1918, Mr. Hudson's report was received and is submitted herewith.

Township of Huron.

On 15th August, 1918, a petition signed by 31 resident ratepayers of the Township of Huron was received asking for an audit of the financial affairs of that Municipality. An Order in Council bearing date 26th September, 1918, confirmed the appointment of Mr. A. F. Falls, of the City of Chatham, C.A., to make the necessary examination and report. On 24th December, 1918, Mr. Falls' report was received and is submitted herewith.

Township of Cardiff.

On 29th August, 1918, a petition signed by 30 resident ratepayers of the Township, was received asking for an audit of the affairs of the Municipality, and on 12th September, 1918, a copy of resolution of the Municipal Council of Cardiff was received also asking for the audit. An Order in Council bearing

date 13th September, 1918, confirmed the appointment of Mr. Henry Glover, of the City of Toronto, Accountant, to make the necessary investigation and report. On 27th December, 1918, Mr. Glover's report was received and is submitted herewith.

Township of Maidstone.

On 19th October, 1918, a petition signed by 32 resident ratepayers of the Township of Maidstone asking for an audit of the financial affairs of the Township was received. An Order in Council bearing date 8th November, 1918, confirmed the appointment of Mr. R. W. Johnson, of the City of St. Thomas, C.A., to make the necessary examination and report. The investigation has not been completed.

I have the honour to be,

Sir,

Your obedient servant.

J. W. Sharpe,

Provincial Municipal Auditor.

Toronto, 2nd January, 1919.

Form of Petition.

When an audit is desired by ratepayers of a Municipality, the following form of petition may be used:

"To His Honour the Lieutenant-Governor of the Province of Ontario.

The petition of the undersigned resident ratepayers of the ..... of ..... in the County of .....

Sheweth

That (set out briefly the reasons for the audit.)

Your petitioners therefore pray that the Provincial Municipal Auditor be required to make an investigation, examination and audit of the books, accounts, vouchers and money of the Municipality of the said ..... of .... for the years ....."

The petition must be signed by not less than thirty ratepayers resident in the Municipality and evidence must be furnished by statutory declaration or otherwise that the petitioners are all resident ratepayers and that each one signed the petition.

APPENDIX.

Sault Ste. Marie, Ontario, November 4th, 1918.

The Municipal Corporation of the Township of Korah.

Report of Edgar T. Read, of Sault Ste. Marie, Ontario, in accordance with an Order-in-Council dated the 19th day of December, A.D. 1917.

Period.

Examination of the records covers six years, viz., 1910, 1911, 1912, 1913, 1914, 1915.

Auditors for the Period.

Rev. W. H. Hunter and Mr. J. P. Everett.

Records Apparently Not on File.

A number of important records do not appear to be on file. These, amongst others, include all invoices covering purchases, a number of stubs of Receipt Books, Pay Sheets, etc.

Records Furnished.

Assessment Rolls, Tax Collector's Rolls, Tax Collector's Cash Books, Treasurer's Cash Books, some Bank Vouchers, Minute Book, Warrant Ledger, Land Ledgers and Bank Books.

Assessment Rolls and Tax Collector's Rolls.

The Assessment Rolls and the Tax Collector's Rolls have been carefully compared.

CASH RECORDS.

(*a*) The additions in the Tax Collector's Cash Books have been checked and the amount collected by the Tax Collector has been checked with the amount as shown in the Treasurer's Cash Book, and in each case the amounts so handed to the Treasurer have proved to be correct.

(*b*) All Cash Receipts as shown in the Tax Collector's Cash Book and the Treasurer's Cash Book have been checked with the Cash entries in the Land Ledgers, and it would appear that $157.56 has been collected by the Treasurer which apparently has not been placed to the credit of the Township of Korah. The particulars of this amount are as follows:

Page.	Township.	Section.	Description.	Amount.	
12	Parke	3	S.W. ¼	$12 93	
265	Awenge	7	W. ½ of N.W. ¼	22 50	
32	Korah	7	S. ½ of N.E. ¼	6 49	
202	Korah	29	N.W. ¼ of S.W. ¼	9 65	
243	Korah	34	S.W. ¼ of S.W. ¼	34 74	
243	Korah	34	E. ½ of S.W. ¼	69 65	
					$155 96

Page.	Sub-division.	Description.	Amount.	
308	Brooks	Lot 87	$0 79	
308	Brooks	Lot 88	81	
				1 60
				$157 56

(*c*) Certain tax payers have paid their taxes, but apparently were not credited with same in the Land Ledgers.

The particulars are:

Page.	Township.	Section.	Description.	Amount.	
7	Parke	2	S. ½ of N.E. ¼ of S.E. ¼	$1 61	
199	Korah	29	N. ½ of N.E. ¼ of S.W. ¼	88	
					$2 49

Page	Sub-division.	Description.	Amount.	
363	Hamilton	Lot 354	$0 26	
366	Hamilton	Lot 365	26	
366	Hamilton	Lot 366	26	
				78
				$3 27

JAMES ELLIOTT & SONS.

One of the chief grievances which a certain Section of Taxpayers had against the Council and other ratepayers was the fact that in the Auditor's Report for the year 1913 it was shown that Jas. Elliot & Sons received $107.75 for road work from Overseer Geo. Ashmore. Mr. Ashmore stated that he had never paid them anything and that there must be something wrong. It was stated that the Council were paying money to Jas. Elliot & Sons for the upkeep of a road which they had undertaken to keep in repair, free of all cost to the Municipality, but I find that the item is correct, although wrongly shown in the Auditor's report. The facts appear to me to be as follows:

According to the Minute Book (page 270) at the regular meeting of the Council on the 3rd day of February, 1913, several accounts were passed, including Jas. Elliot & Sons for gravel, and hauling the same for Division 1 under By-law 105, and the account in question is therefore authorized for payment, viz., $107.85.

It was not until the 3rd day of March, 1913 (Minute Book, page 276) that the Agreement was entered into between Jas. Elliot & Sons and the Township of Korah, whereby Jas. Elliot & Sons were granted permission to open a special roadway from the main road to their brick plant, on the condition that the total cost of preparing such road and the upkeep should be borne for the term of five years by Jas. Elliot & Sons.

General Remarks.

A number of other grievances have been brought to my attention and they have all been investigated and I find that there is practically nothing in them, but of all these different grievances I have confined myself to reporting at length on one only, which is the matter of Jas. Elliot & Sons and the private roadway.

Edgar T. Read,
Auditor.

Cost of this audit, $287.

123 Bay Street,

Toronto, Ont., March 4th, 1918.

To the Reeve and Council,
Township of North Gwillimbury, Ont.

Gentlemen.—Acting under instructions from the Provincial Municipal Auditor, J. W. Sharpe, K.C., and Order in Council under date of 4th of October, 1917, an Inspection, Audit, or Examination of the Books, Vouchers and Moneys of the Municipality of the Township of North Gwillimbury was made for the years 1912, 1913, 1914, 1915, and 1916.

Investigation was granted upon a petition signed by numerous ratepayers.

TOWNSHIP OF NORTH GWILLIMBURY.

Petition.

In the matter of a petition of James Anderson and others, asking for a Provincial Municipal Audit of the Receipts, Expenditures, Bookkeeping and manner of conducting the affairs and business of the Township of North Gwillimbury for the years 1912, 1913, 1914, 1915 and 1916, and of unlawful and illegal payments accepted by the members of the Municipal Council for these years and for irregularities in auditing the accounts for said years, and other matters.

1. Your petitioners claim that according to the Auditor's Reports of the years 1912, 1913, 1914, 1915 and 1916, the Council of said Township illegally, unlawfully and irregularly paid out large sums of the funds of said Municipality without having proper vouchers therefor.

2. That payments of the Township funds were unlawfully and improperly paid during said years to members of the Municipal Council of said Township and others.

3. That no proper audit of the Receipts and Expenditures of said Corporation for said years were made, and no dates given as to Receipts and Disbursements.

4. That many irregularities existed during said years, some of which are as follows, viz.:

(*a*) During the year 1912 Councillor Walter Thompson was paid $677.50 as follows:

Work and Material, Elm Grove Bridge	$163 51
Taking out Thompson Bridge	11 25
Work and Material, Jersey Bridge	46 37
Work on Lake Shore Road	42 12
Work on Lake Shore Road, Con. 5	214 25
Grant on Lake Shore Road	200 00
Total	$677 50

(*b*) In 1913 he was paid $146.16 as follows:

Pay Sheet No. 8	$136 66
Two Culverts	9 50
Total	$146 16

(*c*) In 1916 Councillor Thompson was paid $334.14 as follows: In addition he received as Councillor, 1912, $72.00; 1913, $66.00; 1916, $108.00:

As Commissioner	$16 00
Pay Sheet No. 6	88 00
Pay Sheet No. 7	104 00
Pay Sheet No. 8	126 14
Total	$334 14

(*d*) Councillor J. D. Hamilton in 1913 was paid $863.62 as follows:

Work on Lake Shore Road	$39 00
Repairing Culverts	4 00
Work on Lake Shore Road	119 75
Work on Division 48	48 75
Work on South Town Line	100 00
Gravelling and Grading	83 25
To pay for work, Divisions 49, 7, 17, and 48	290 65
To pay for work, South Town Line	105 72
Repairs on County Bridge	20 00
To pay Culvert, Grading and Gravelling	52 50
Total	$863 62

(*e*) In 1914 Councillor Hamilton was paid $744.36, made up as follows:

Pay Sheet No. 1	$14 00
Pay Sheet No. 2	86 50
Pay Sheet No. 6	183 70
Pay Sheet No. 8	71 33
Pay Sheet No. 9	149 10
Pay Sheet No. 13	138 50
Pay Sheet No. 14	58 13
Pay Sheet No. 16	43 10
Total	$744 36

(*f*) In 1915 Councillor Hamilton was paid $479.55, made up as follows:

Pay Sheet No. 8	$113 75
Pay Sheet No. 11	88 60
Work on Roads	40 00
Pay Sheet No. 12	126 25
Pay Sheet No. 40	90 95
Work running Grader	20 00
Total	$479 55

(*g*) In 1916 same Councillor received $183.60 made up as follows: In addition he drew as Councillor, 1913, $100.00; 1914, $75.00; 1915, $88.00; 1916, $110.00. Total, $373.00.

Running Grader	$41 00
Pay Sheet No. 4	130 60
Hire of Motor for Commissioners	12 00
Total	$183 60

(*h*) Councillor Walter Hirst in 1913 was paid $181.25, as follows:

Work in Division No. 7	$100 00
Work in Division No. 6	6 75
Work in Division No. 13	74 50
Total	$181 25

(*i*) In 1914 Hirst was paid $817.05, made up as follows:

Pay Sheet No. 3	$8 00
Pay Sheet No. 4	182 50
Pay Sheet No. 5	159 00
Pay Sheet No. 7	91 50
Pay Sheet No. 10	46 30
Pay Sheet No. 11	106 00
Pay Sheet No. 12	136 75
Pay Sheet No. 17	87 00
Total	$817 05

(*j*) In 1915 Hirst drew $328.75 as follows:

Work on Jersey Bridge	$1 50
Pay Sheet No. 2	216 00
Pay Sheet No. 5	108 75
Work on Jersey Bridge	2 50
Total	$328 75

As Councillor he drew, 1913, $110.00; 1914, $92.00; 1915, $51.00. Total, $253.00.

(*k*) Reeve Willoughby in 1914 was paid $155.20 as follows:

Pay Sheet No. 15	$87 20
Pay Sheet No. 18	53 00
Expenses Jersey Bridge	15 00
Total	$155 20

(*l*) In 1915 the Reeve was paid $582.30, as follows:

Pay Sheet No. 1	$184 30
Pay Sheet No. 13	300 00
Team work per James Link	50 00
Team work per H. H. Willoughby	48 00
Total	$582 30

(*m*) In 1916, he, Willoughby, was paid $60.66, as follows:

Pay Sheet No. 8	$20 66
Expenses Murrell Trial	40 00
Total	$60 66

As Councillor, 1912, $56.00; 1913, $92.00; 1914, $88.00; 1915, $88.00; 1916, $86.00. Total $410.00.

(*n*) Councillor Robert Tillett for 1915 was paid $239.00, as follows:

To work under Commissioner Willoughby	$32 00
To work under Commissioner Tillett	34 00
To work on Grader	60 00
To Pay Sheet No. 9	113 00
Total	$239 00

Councillor, $60.00.

5. That during said five years firstly hereinbefore mentioned no by-law or proper resolutions were passed appointing members of Council as "Road Commissioners" or "Road Overseers" as provided by "The Municipal Act."

6. That during the said five preceding years the Board of Health of said Township (consisting of Reeve Willoughby, Jesse Connell and Dr. Pringle) were paid the following sums, viz.: 1913, $97.25; 1914, $97.40; 1915, $181.50; and in 1916, $119.10; of this sum, Dr. Pringle received $330.25; all of which sums were paid improperly, as under the provisions of Section 39, "The Public Health Act," "Every medical health officer shall be paid a reasonable salary to be fixed by by-law," no such by-law having been passed.

7. That in 1916, the Council improperly paid W. A. Hirst $37.10 and Walter Hirst, $152.00, in connection with the "Jersey Bridge." No by-law appointing them Commissioners having been passed by Council.

8. In 1913, the Council invited tenders for construction of a bridge known as "The Thompson Bridge," and the tender of Lewis Construction Company was accepted for the substructure, at the sum of $1,414.00; and the tender of the Corbett Foundry Company for the superstructure at the sum of $2,000.00 was also accepted, but no written contracts were entered into by the Corporation with either parties.

9. The amount paid the Lewis Company was the sum of $1,960.14, an excess of $546.14 over the contract price. The amount paid the Corbett Company was $1,722.00, being $78.00 less than the contract price. In addition to the payments to the two contractors there was paid the sum of $898.98 for various items; also $102.50 filling in approaches. One hundred and forty-three dollars and seventy cents for inspection; and $265.00 to engineer, making the total cost of such bridge $5,092.08, for which proper vouchers are not shown.

10. That debentures for the sum of $4,500.00 were issued for the payment of such bridge in ten annual payments, five of which appear to have been sold to private individuals without tender. Your petitioners desire that some explanation be given as to these items of payments as the Auditor's reports give no intelligent knowledge thereof.

11. That in 1915, tenders were invited for the construction of a bridge over the Jersey River and the tender of the Ritchie Construction Company was accepted for the substructure at $1,730.00; and that of The Chatham Bridge Company for the superstructure at $1,800.00. The Ritchie Company was paid $3,159.99; an excess of $1,429.00 over their contract price; the Chatham Bridge Company was paid $1,880.00, an excess of $80.00 over their contract price. Other payments of $1,149.93 to divers have been made bringing the total payments on account of such bridge to $6,189.92. Your petitioners are desirous of having these accounts also properly audited and vouchers produced for such payments.

12. For the payment of this last mentioned bridge, debentures were issued and sold to private individuals without tender.

13. The Auditor's report for 1913 shows that the Ontario Sewer Pipe Company was paid $105.45 for tile, and $12.97 sold. In 1914, there appears to have been received $102.48 for tile, and none purchased unless it be charged under some other name than tile.

14. The Auditor's reports do not show what Fidelity Bonds the Township Treasurer has given (if any) or where the Corporation money is kept as required by law, and your petitioners desire that such matters be reported by the Auditor.

Your petitioners therefore ask that an audit of the accounts be taken and enquiry made as to the alleged irregularities and illegal acts and unlawful payments hereinbefore mentioned.

Dated at Sutton this 14th day of August, A.D. 1917.

T. J. Woodcock,
Agent for Petitioners.

Petition.

Matters set forth in the petition have been answered as fully as possible hereunder. Further reports on the subjects are contained under separate headings.

1. This is a sweeping statement to make and can only be substantiated in so far that certain Councillors were paid for the use of their teams which is not in accordance with the Municipal Act. There is no doubt whatever that full service was rendered for value received and that such work was performed in ignorance of the strict meaning of the Act and has since been discontinued.

2. Apparently the only payments made to members of the Council improperly were those made while they were acting as Road Commissioners and are covered by the foregoing paragraph.

3. Auditors' statements for the five years were seen and with the exception of a few errors in printing they are well arranged.

Extract from pamphlet prepared by the Provincial Municipal Auditor, J. W. Sharpe, K.C., is well worth including.

"Auditors shall annually prepare in duplicate an abstract of the receipts, expenditure, assets and liabilities of the Corporation or Commission, and a detailed statement in duplicate of the same for the next preceding year in such form as the Council may direct, and shall report on all accounts audited by them and make a special report of any expenditure made contrary to law, and shall transmit by registered post one copy of the abstract and one copy of the detailed statement to the Secretary of the Bureau of Industries, and shall file the other abstract, the other detailed statement, and the reports in the office of the Clerk not later than the 1st day of March.

When the Auditors are appointed under Section 233, or when they have been required to make their audit under the provisions of Section 240, the abstracts, statements, and reports shall be with respect to the year for which they are appointed, and shall be made and filed within one month after the expiry of that year, and the Auditors shall be deemed to continue in office during that period for the purpose only of preparing and filing such statements and reports. Section 237, chap. 192, R.S.O. 194. Councils rarely give any directions as to the form in which detailed statements shall be made. The statement should, however, give the date when each item was received or paid, the full name of the person

to whom paid or from whom received, and the account or purpose for which it had been received or paid, and as far as possible all items should be grouped or classified under distinctive headings.

The Auditors of every Municipality shall also make a report upon the condition and sufficiency of the securities of the Treasurer, and such report shall show what cash balance if any, was due from the Treasurer to the Corporation at the date of the audit, and where it is deposited and what security there is that the same will be available when required. Section 237, s.s. 6, chap. 192, R.S.O. 1914.

Auditors should also examine the securities given by the collector of taxes.

3. The Auditors report each year that they have examined the Treasurer's Books and Vouchers and while they could have reported more fully on certain matters there is no evidence of them neglecting to check the receipts and payments. It would be better to insert the date against the items of receipts and payments but it is not compulsory and if the Council so wish directions may be given by them to have dates shown on the printed reports.

4. It is the custom to make payment for the work done on a certain road division direct to the Road Commissioner in charge of that section.

In the years 1912 and 1913 there were no payrolls and consequently no proof of payment to the individual worker is in evidence. Payrolls were instituted in the year 1914 and have been in use since.

Payment for the total amount of payroll is made in one amount to the Commissioner who in turn disburses it to the individual workmen and obtains their signatures therefor on the pay sheet.

If this was carried out entirely all would be well, but it will readily be seen from the remarks made hereunder on the various payrolls that a number of signatures were not obtained and were signed in place by the Commissioners or others.

1914 Payroll No. 1, May 16th, 1914. Signed by Commissioner, as to its correctness, and bears signatures of all parties receiving payment.

Nos. 4 and 5. Several items signed by W. Hirst for other parties.

No. 6. C. Stephens signed for three other parties.

No. 7. W. Hirst signed for several others.

No. 8. P. Reed signed for three others.

Nos. 10 and 11. W. Hirst signed for several items.

No. 17. W. Hirst signed for all items.

1915 Payroll No. 2. W. Hirst signed for several items.

No. 5. W. Hirst signs for majority.

No. 8. No signatures on payroll for Geo. Wilkinson, $8.00; J. Davidson, $5.00.

No. 10. Five items on payroll amounting to $21.00 only, one signature, J. Nelson for $2.00.

No. 15. For $10.00 no signatures.

1916 Payroll No. 3. Several items signed for by W. Thompson.

No. 4. Amount of $15.85 to G. Anderson, signed for by J. D. Hamilton.

No. 8. Several alterations made thereon, but total amount called for agrees with the amount paid through Cash Book. C. Willoughby signed for two others.

Many of the payrolls were made out in lead pencil and it is essential that all original documents be written in ink.

All payments made to Councillors were supported by an order signed by the Reeve and endorsed by the Commissioner. Authority for payment was also contained in the Minute Book.

5. A member of the Council of a County, Village or Township may be appointed Commissioner, Superintendent or Overseer of any highway or of any work undertaken wholly or in part at the expense of the Corporation, and may be paid the like remuneration for his services as if he were not a member of the Council. R.S.O. chap. 192, sec. 426.

Minutes of the following named dates, 8 January, 1912; 10 March, 1913; 2 March, 1914; 17 March, 1915, and 10 January, 1916, contain this resolution, "That the whole Council be appointed a Road and Bridge Committee for the year."

By-laws were passed in the years 1913, 1914, 1915 and 1916, appointing the Road and Bridge Committee to look after certain road divisions.

It would be wiser to appoint the members of Council as Road Commissioners by name rather than as a body.

6. Payments made on account of the Board of Health were as follows, no payments being made in the year 1912:

	1913.	1914.	1915.	1916.
Dr. Pringle, M.O.H.	$65 50	$67 40	$126 50	$70 85
J. Connell, Member	14 75	11 00	33 00	24 75
C. E. Willoughby, Member	13 00	11 00	14 00	15.50
F. Van Norman, Secretary	8 00	8 00	8 00	8 00
	$101 25	$97 40	$181 50	$119 10

Accounts were regularly passed both in the Minute Book of the Board of Health and Township Council.

Medical Health Officer was appointed under By-law No. 604 at a salary of $15.00 per annum. He was, however, paid for his attendance to certain cases as authorized by the Board, and allowed for attending the Medical Health Convention annually, details of which are contained on vouchers in the Clerk's care.

Other members of the Board were paid for their attendance to the regular Quarterly Meetings and other special services.

7. Walter A. Hirst was paid $152.00 for his services as Inspector on the Jersey Bridge on November 20th, 1916. Apparently no By-law was passed appointing him to this work and it does not appear necessary. The Engineer agrees as to this amount.

Walter A. Hirst was paid $37.10 in December, 1916, on account of telephone and lights and there is no reason to question this payment as it was authorized by the Minutes in the usual way.

Engineer's Report.

Re Audit of Expenditure on Baldwin or Thompson Bridge.

8 and 9. As requested, I have checked over the list of expenditures you have submitted, taken from the audit of the books of the Township of North Gwillimbury and have prepared the statement given below.

Comparing this statement with our own records, with the letters from the contractors showing the amounts received by them and with the petition to the Government asking for the audit, I would observe as follows:

The petition states that no contracts were signed. This is in error, as we prepared contracts and sent them for signature to the Contractors, namely, to The Lewis Construction Co., for $1,414.00, for the abutments without piling, cement or reinforcing steel (the piling to be done at cost, plus 10 per cent.)

and later another contract for $310.00 for a reinforced concrete floor, which it was decided to substitute for a wooden one. This involved an extra of $22.00 for steel expansion aprons which was paid to the Corbett Foundry Co., whose contract for the steel superstructure was for $2,000.00. By arrangement with the Lewis Company, the piling was done by F. Pipe, who had a pile driver nearby, at the very reasonable cost of $366.00. The statement shows that The Lewis Construction Co. were paid $1,960.14, the sum of $25.00 having been deducted and paid out for the removal of some piles left in the stream. This shows that there was paid $36.60 (being 10 per cent. of the cost of piling, as per contract) and an extra of $224.54 for the extra concrete due to carrying the abutments to a greater depth than called for under the contract, and for the cost of some extra cement brought up by radial from Newmarket (which should have been supplied by the Township, being the amount required over the carload purchased by the Township). It also included some teaming of some cement condemned by us. Payments for cement, steel, work on the approaches, Engineer's and Inspector's fees all outside the contracts bring the cost of the bridge to $5,361.08. All payments appear to have been regularly made and in strict accordance with the contracts. The petitioners have evidently not understood the contracts, which were drawn in accordance with general practice.

In addition to the cost of the bridge proper, our statement shows certain payments in connection with an election on the question of issuing debentures and with an arbitration with the County of York as to who should build this bridge.

A. W. CONNOR,
Engineer on Baldwin Bridge.

STATEMENT OF EXPENDITURE ON BALDWIN OR THOMPSON BRIDGE.

Lewis Construction Co.—		
Contract	$1,414 00	For abutments without piling, steel or cement.
Contract	310 00	For concrete floor.
Contract	36 60	Percentage on piling.
Extras	224 54	Extra concrete & cement.
Total due	$1,985 14	
Less	25 00	Paid for removal of piles.
Total paid	$1,960 14	
Corbett Foundry Co.—		
Contract	$2,000 00	Steel.
Extra	22 00	For Apron.
Cement and Freight	380 49	Not included in contract.
F. Jones—		
Piles and Pile Driving	366 00	
Reinforcing Steel	66 25	Not included in contract.
A. W. Connor, Engineer on Bridge and Arbitration	265 00	
H. B. Hyams, Inspector work on	143 70	
Approaches	132 50	
Removing piles	25 00	Deducted from Contractor.
Total Cost of Bridge	$5,361 08	
Cost of Election	32 00	
Cost of Arbitration—		
Lawyers	300 00	
Reporters	80 75	
Witnesses	153 40	
Livery for Witnesses	7 50	
Surveyor	27 50	
Total Cost	$5,962 23	

Re Audit of Expenditure on Jersey Bridge.

11. As requested I have checked over the list of expenditures you have submitted, taken from your audit of the books of the Township of North Gwillimbury and have prepared statement given below. Comparing this statement with the signed contracts and our own records, and also with the letters from the Contractors showing the amounts they received and with the petition to the Government asking for the audit, I would observe as follows: The contract for the substructure was signed by the Ritchie Construction Co. for $1,930.00, not including the piling. Their tender was for $1,730.00 and $225.00 for a temporary bridge. By arrangement with Mr. Ritchie, the contract for the two was signed for $25.00 less than the tender. The statement shows that $3,159.99 was paid to the Ritchie Construction Co.

This is the amount recommended in our letter of May 27, 1916. It included the cost of piling (which was to be done under the contract at cost plus 10 per cent.) less certain deductions for less concrete than called for in the contract. The contract for the steel superstructure and concrete floor was signed by the Chatham Bridge Co. for $2,090.00, being in accordance with their tender of $1,800.00 for the former and $290.00 for the latter. They sublet the concrete work to Thos. Welsh for $210.00 (supplying him with the reinforcing steel). On their order Mr. Welsh was paid the $210.00 and the balance to them. They did not get $80.00 more than their contract, as the petition alleges. The Township had no concern with the fact that the sub-contract was $80.00 or $800.00 less than the tender for the floor. In addition to these payments the piles and splices were paid for direct instead of through the Contractor, also payment for approach rail, some extra cost of lighting and Engineer's fees not included in the contract.

All payments appear to have been regularly made and in strict accordance with the contracts.

A. W. Connor,
Engineer on Jersey Bridge.

STATEMENT OF EXPENDITURES ON JERSEY BRIDGE.

Ritchie Construction Co.—		
As per Engineer's certificate (For Abutments and Piling)		$3,159 99
Chatham Bridge Co.—		
Contract for Steel and Floor	$1,880 00	
Thos. Welsh on order of Chatham Bridge Co.	210 00	
Total of Chatham Bridge Co.'s contract		2,090 00
Extra to T. Welsh on approach.....		10 00
Cost of Piles		314 05
McGregor & McIntyre, Splices		57 43
Glover, Splices		2 00
Engineers' fees		310 00
W. Hirst, Phone and Lights		37 10
W. Hirst, Inspector		152 00
Approach Railing		12 09
Expenses of By-law		52 00
Steel Co. of Canada—Reinforcing Steel		46 08
		$6,242 74

10. Thompson Bridge Debentures issued under By-law No. 607 were sold to the following parties.

D. E. Sprague—No. 1 Debenture	$357 75
Francis Young—Nos. 2 and 3 Debentures	770 08
John Rose—Nos. 4 and 5 Debentures	849 00
Wm. Woods—Nos. 6 to 10 Debentures	2,523 01
	$4,499 84

All the debentures were sold at par value and it is not essential that tenders be called for.

12. Jersey Bridge Debentures issued under By-law No. 630 were sold to the following parties.

W. Woods—Debentures Nos. 1 to 4	$2,218 00
D. E. Sprague—Debentures Nos. 5 and 6	1,282 28
	$3,500 28

Debentures were sold at par and tenders need not be called for unless the Council so requests.

13. On December 15th, 1914, a payment of $210.28 was made to Ontario Sewer Pipe Co. for tile purchased and delivered on May 8th.

14. Details concerning the Treasurer's and Collector's Bonds are contained in a report under the heading of Bonds. There is no trace of the local Auditors reporting thereon to the Council.

15. Township Treasurer makes all the payments with the exception of outside ones by cash.

Bank Account is kept in the Nova Scotia Bank at Sutton West, but it is a personal account with the Treasurer, as his signature only is needed on the cheques. Usually a cheque is drawn for a lump sum and individual payments made therefrom.

By-Laws.

Original by-laws are loose in Clerk's care but copy of these has been made in a bound by-law book.

By-laws passed in each of the years 1913, 1914, 1915 and 1916 appoint Road and Bridge Committee to look after certain named divisions.

By-law No. 617 passed in May 1915 placed the following road divisions No. 4, 6, 7, 8, 13, 48, 49 under the Road and Bridge Committee, to be known as No. 12.

Minutes.

Minutes were gone over for the five years and all were properly signed with the exception of those for August 28th, 1916 and December 15th, 1916 which were not signed by the Clerk.

Certain items paid through the cash book were not authorized in the minutes and a list of these is attached.

Gravel minute book was kept wherein all payments on account of gravel were supposed to be entered. A number of such payments were not entered therein and are listed among the other payments not authorized.

Gravel book does not take the place of the minute book as the items are not certified to in any way whatever. All payments should be authorized through the regular minute book, without exception.

Tax Collector.

Tax Collector's accounts for the years 1912 to 1916 have been prepared and attached hereto.

There are certain differences not accounted for but as these are of small amounts no special mention has been made of them.

On the whole, tax collectors appear to have performed their duties very satisfactorily and there is no special comment to be made thereon.

Tax Arrears.

List of tax arrears has been furnished by the Township Treasurer to the County annually but no record has been kept by him of the details of such returns and their ultimate disposition.

Statement of taxes returned to the County Treasurer for the years 1911 to 1916 and payments made to Township is exhibited.

Payments made to the Township were all traced into the Municipal Cash Book. Balance in his hands agrees with that amount shown in the Auditor's statement at 31st December, 1916.

Arrears roll should be kept by the Treasurer so that at any time it is possible to know what tax arrears are still unpaid as it is essential that arrears should always be included among the assets on the Balance Sheet.

Assessment Rolls.

Assessor's affirmation as called for under the Assessment Act was attached to each year's roll.

Assessors for the years 1912 to 1916 were as follows:—

1912.....D. S. Earl
1913.....R. A. Hamilton
1914.....Geo. Hamilton
1915.....R. A. Hamilton
1916.....D. E. Sprague

Assessments as contained in the rolls for the five years were contrasted with those entries in the Collector's Rolls for similar years. Alterations were verified by the minutes of the Court of Revision and those not confirmed by the court are enumerated hereunder.

Year 1912 Assessment Roll was agreed with Collector's Roll and all alterations were authorized by Court of Revision.

Year 1913. Ferris Estate calls for $800.00.
Lot 20-21 Roache's Point $200.00 S.D. Rain St.
Lot 20-21-22 Roache's Point $600.00 N.S. Rain St.
Collector's Roll shows $600.00, the other amount is entered therein but not extended. Therefore Township lose taxes on this assessment.
G.W.N. Telegraph Co. Assessment is $150.00.
Property $120.00, business $30.00.

This appears in Collector's Roll as $720.00 and the Township General Taxes are based on this amount. School taxes however appear to have been based on an assessment of $750.00.

Year 1914. Alex. Anderson. Concession 9. Lot 15, assessment $1,200.00. This was altered to $1,000.00 and was not confirmed in the minutes of Court of Revision.

Charles E. Winters. Concession 2. Lot 18. assessment $1,000.00. Assessment reduced to $900.00 not confirmed by Court of Revision.

Clerk states that these assessments were changed before the roll was handed to him.

Year 1915. Clarence Crittendem, Concession 7. Lot 1. Assessment Roll calls for $100.00. this was a duplicate assessment and Lot appears under name of Thomas Graham.

G. T. Lee, Concession 2. Lot 20. Assessment $700.00. reduced to $600.00 Not in Minute Book.

W. H. Saunders. Concession 9. Lot 19. Assessment $6,000.00. reduced to $5,000.00. Not in Minute Book.

C. C. Van Norman, Concession 2. Lot 15. Assessment $5,000.00, reduced to $3,500.00. Not in Minute Book.

Rev. Van Norman. Concession 9. Lot 4. Assessment $500.00, reduced to $300.00. Not in Minute Book.

Frank Williamson. Concession 2. Lots 25-26. Assessment $1,000.00. reduced to $900.00. Not in Minute Book.

Clerk states that all these changes were made before the roll for this year was handed to him.

Year 1916. Mrs. Albert Bruels. Concession 5. Lot 17. Assessment $1,300.00, reduced to $1,200.00. Not in Minute Book.

Judd Stephens, Concesssion 2. Lot 23. Assessment $200.00. reduced to $100.00. Not in Minute Book.

Clerk states that the above two assessments were changed before the roll was handed to him.

Rev. Thos Campbell, Concession 2. Lot 19, Assessment $800.00, reduced to $650.00. Not in Minute Book. This assessment was changed by Clerk and bears his initials. He stated that by error he omitted to enter this in the Court of Revision Minutes.

Collector's Rolls.

Collector's rolls were checked for the five years. 1912 to 1916. inclusive.

Clerk's Certificate signed by him appeared in each of the rolls.

Collector's Oath was also seen for each year.

D. E. Sprague was Collector for the years 1912. 1913. 1914. 1915. and R. D. Hamilton for the year 1916.

Errors in the extensions for the several years are enumerated hereunder.

In the year 1913 there was a total of $14.00 loss to the Township in this manner.

In the year 1914 there was a total of $29.90 loss.

In the year 1915 $6.83. and the year 1916. $1.00.

ERRORS IN EXTENSIONS, 1912-1916.

1913 Page		Roll Total	Correct Total	Over Added	Short Added
1	Astle, Henry, Con. 6, Lot 5	$44 03	$45 03	.....	$1 00
4	Boadway, Frank, Con. 5, Lot 21	39 76	49 76	.....	10 00
6	Connell, Jesse, Con. 3, Lot 14	72 50	73 50	.....	1 00
9	Eames, Arthur, Con. 2, Lot 25	5 57	6 57	.....	1 00
44	York, Everett, Con. 5, Lot 14	15 20	16 20	.....	1 00
					$14 00
1914					
8	Cross, William, Con. 9, Lot 19	8 88	13 88	.....	5 00
8	Cook, Wilmot, Con. 9, Lots 9-10	32 82	40 96	.....	8 14
12	Gillespie, Walter, Con. 9, Lot 15	11 60	16 10	.....	4 50
30.	Pink, Frank, Con. 2, Lot 14	6 92	7 12	.....	20
38	Silver, M. H. D., Con. 7, Lot 22	45 20	55 20	.....	10 00
39	Sherman, Herman, Con. 2, Lots 13-15 (Curly St.)	7 72	8 82	.....	1 09
40	Sedore, Chris., Con. 2, Lot 2	2 10	2 16	.....	.06
40	Simmerson, Frank, Con. 3, Lots 16-17	42 90	43 90	.....	1 00
45	Wilson, W. H., Con. 2, Lot 19	31 32	28 32	$3 00	.....
				$3 00	$29 90
1915 Page		Roll Total	Correct Total	Over Added	Short Added
6	Campbell, Jos., Con. 2, Lot 24	3 37	3 35	.02	.....
7	Coulter, J., Con. 2, Lot 18	16 30	16 00	.30	.....
11	Fairbarn, Wm., Con. 3, Lot 13	9 70	9 90	.....	.20
20	Landsburg, D., Con. 9, Lot 15	34 68	36 68	.....	2 00
37	Scott, Mrs. S., Con. 9, Lots 15-16	52 40	52 20	.20	.....
37	Shaw, Henry, Con. 9, Lot 6-7	53 40	53 20	.20	.....
39	Sheppard, Jos., Con. 3, Lot 20	31 51	33 61	.....	2 10
43	Willoughby, Geo., Con. 5, Lot 17	6 05	5 60	.45	.....
43	Welburn, Thomas, Con. 4, Lot 2	16 36	20 36	.....	4 00
46	York, Squire, Con. 3, Lot 14	10 20	9 90	.30	.....
				$1 47	$8 30
1916					
40	Taylor, Cecil, Con. 5, Lot 7.	48 60	49 60	.....	1 00

Assessment totals were multiplied by tax rates and were found correct with the exception of a few dollars.

Statement exhibiting proof of such levies is attached hereto.

Levies to be made for the years 1912 to 1916 arranged under the headings for the purpose for which they are levied are tabulated on a statement.

Tax Rates are also tabulated for comparison purposes.

DEBENTURES.

Every Council shall keep a separate account of every debt and shall also keep two additional accounts in respect thereof, one for the interest and the other for the sinking fund or the instalments of principal, and both to be distinguished by a prefix designating the purpose for which the debt was contracted, and the accounts shall be kept so as to exhibit at all times the state of every debt, and the amount of money raised, obtained and appropriated for payment of it. Sec. 301, Chap. 192, R.S.O. 1914.

A record or register of all debentures issued by a municipality should be kept by the Treasurer, and the auditors should check the entries therein with the by-laws authorizing the issue of the debentures and the entries in the Treasurer's Cash Book.

No Register is kept by the Treasurer and the issue as detailed in the several by-laws have been listed on the attached schedule, so that reference can readily be made thereto.

Debentures have all been paid on the due date and are properly cancelled after payment.

Board of Health.

Minutes of the Board were read over and from the year 1913 four meetings were held annually.

Accounts for the remuneration of the Board were passed in the years 1914, 1915, and 1916. Those for 1913 were seen but were not mentioned in the minutes.

Auditor's Report.

Reports were compared with the Municipal Cash Book, and those for the years 1912, 1913, 1914 and 1915 were found correct.

Among the receipts in 1916 appears Non-Resident Taxes from the County Treasurer amounting to $271.89. This was misprinted and is shown on the Auditor's report as $217.89.

Payment to Sam Allen, $1.00 for repairs to grader is misprinted and appears as $7.00 in report.

Cash Balance on hand at 31st December 1916 is exhibited in the Cash Book as $262.13 but appears in report as $261.13.

School House No. 6.

Construction cost of School House was covered by the issue of notes signed by the Trustees.

Particulars and form of note are shown hereunder. Equal annual payments of Interest and Principal were made, and the correctness of this issue has been proven.

School House No. 6, North Gwillimbury.

Dated	No.	Per cent.	Amount	Payee	Due
July 1st, 1913,	No. 1	6%	$949 58	Mrs. J. B. Sprague,	1 year after date.
"	2	6%	949 58	Mrs. D. H. Sprague,	2 years after date.
"	3	6%	949 58	Mrs. D. H. Sprague,	3 years after date.
"	4	6%	949 58	Mrs. D. H. Sprague,	4 years after date.
"	5	6%	949 58	Mrs. D. H. Sprague,	5 years after date.
			$4,747 90		

One year after date the Board of Public School Trustees for S.S. No. 6 in North Gwillimbury Township, in the County of York promises to pay to Mrs. Jno. B. Sprague and Mrs. D. H. Sprague the sum of Nine Hundred and Forty-nine and 58/100 Dollars, being payment No. 1 upon $4,000.00 advanced at 6 per cent. per annum for the erection of a school house for the above section.

Due	Interest	Principal	Total
July 1, 1914	$240 00	$709 58	$949 58
1915	197 42	752 16	949 58
1916	152 29	797 29	949 58
1917	104 45	845 13	949 58
1918	53 74	895 84	949 58
	747 90	$4,000 00	$4,747 90

In the year 1913 the Council levied $1,203.33 for No. 6 school section on account of note. This amount however was to cover note of $949.58, Architects fees and School furniture not included in the $4,000.00 borrowed on notes.

School Trustees should have made application to the Municipal Council for the issue of debentures for construction of the school house. They have no powers to raise money for this purpose. See sections 44 and 45 Public School Act.

Bonds.

Treasurer's and Collector's Bonds for the period under review were scrutinized and found in order. Each of the bonds was signed by the official and two other bondsmen, details of which are given hereunder.

Amount of the Collector's bonds is sufficient, but the Treasurer's bond could be increased.

Dated	Bondsmen	Bond Amount of
27 May, 1901	J. D. Davidson, Treasurer John A. Boag. John A. Sheppard.	$5,000 00
13 Oct., 1916	Robert A. Hamilton, Collector George Hamilton. Arthur E. Morton.	20,000 00
2 Nov., 1915	D. E. Sprague, Collector J. B. Sprague. H. A. Winch.	20,000 00
26 Oct., 1914	D. E. Sprague, Collector J. B. Sprague. H. A. Winch.	20,000 00
27 Oct., 1913	D. E. Sprague, Collector J. B. Sprague. H. A. Winch.	10,000 00
15 Oct., 1912	D. E. Sprague, Collector J. B. Sprague. H. A. Winch.	10,000 00

School Taxes.

Public School Taxes were all contained in one column and consequently an analysis had to be made of the items contained therein to determine the amount applicable to each of the School Sections.

Separate columns should be used for each School Section if possible or a summary made at the back of the Collector's Roll.

It will be observed from the appended statements of School Taxes and disposition of same that the Township has retained certain School monies.

Summary as follows shows the net results in totals.

Year	General Levy Retained	General Levy Retained	Special Levy Retained	Special Levy Overpaid
1912	$174 16	$134 60	$39 56	
1913	157 48	88 85	68 63	
1914	42 39	39 78	2 61	
1915	52 11	78 17	.....	$26 06
1916	70 94	97 76	.....	26 82
	$497 08	$439 16	$110 80	$52 88

Orders.

Orders signed by the Reeve were seen for all payments, but in a great many cases the endorsation on the back thereof was not made by the party to whom the order was payable. Apparently members of Council or others present at the meeting took it upon themselves to pay over to those that should receive the payment, endorsing the orders in their own name or in cases stating in writing on the back that it was for the payee.

It is essential that the payee endorses the order himself or if that is not possible, then a receipt from him can be attached to the order.

Conclusion.

Collector's Rolls occupied more time than they should have. Only the main column was added. It was necessary to add all columns. No summary had been made, this was done. Analysis of Special School Tax column was also completed.

Township books in the care of the Clerk and Treasurer have no protection from fire. In the case of the Clerk a safe large enough to contain the most valuable records is necessary.

Attention and co-operation of the Reeve and Officials is appreciated.

Report and Statements contained herewith are respectfully submitted.

Henry Glover.
For Provincial Municipal Auditor.

Costs of this audit, $536.

TOWNSHIP OF NORTH GWILLIMBURY.

Debenture Issues.

Thompson Bridge — By-Law No. 607 — Period 10 years — Interest 5% — Passed Sept. 20, 1913

Due Date	Interest	Principal	Total
1 Dec., 1914	$225 00	$357 75	$582 75
" 1915	207 10	375 65	582 75
" 1916	188 32	394 43	582 75
" 1917	168 60	414 15	582 75
" 1918	147 89	434 86	582 75
" 1919	126 15	456 60	582 75
" 1920	103 32	479 43	582 75
" 1921	79 34	503 41	582 75
" 1922	54 18	528 57	582 75
" 1923	27 75	555 00	582 75
	$1,327 65	$4,499 85	$5,827 50

Jersey Bridge — By-Law No. 629 — Period 6 years — Interest 5% — Passed Oct. 12, 1915

Due Date	Interest	Principal	Total
1 Dec., 1916	$175 00	$514 60	$689 60
" 1917	149 27	540 33	689 60
" 1918	122 25	567 35	589 60
" 1919	93 88	595 72	689 60
" 1920	64 10	625 50	689 60
" 1921	32 82	656 78	689 60
	$637 32	$3,500 28	$4,137 60

School House No. 3 — By-Law No. 581 — Period 10 years — Interest 5% — Passed Aug. 29, 1910

Due Date	Interest	Principal	Total
15 Dec., 1910	$150 00	$300 00	$450 00
" 1911	135 00	300 00	435 00
" 1912	120 00	300 00	420 00
" 1913	105 00	300 00	405 00
" 1914	90 00	300 00	390 00
" 1915	75 00	300 00	375 00
" 1916	60 00	300 00	360 00
" 1917	45 00	300 00	345 00
" 1918	30 00	300 00	330 00
" 1919	15 00	300 00	315 00
	$825 00	$3,000 00	$3,825 00

COLLECTOR'S ROLL, TOTALS AGREED WITH ASSESSMENT AT MILL RATE.

1912 Assessment, $1,153,000.00.

	Tax Rate	Tax at Mill Rate	Tax Levied	Differences Short Levied	Differences Excess Levied
County Rate	2½ M.	$2,594 25	$2,598 80	.....	$4 55
Township Rate	2 M.	2,306 00	2,309 60	.....	3 60
General School	2 M.	2,306 00	2,309 60	.....	3 60
1913 Assessment, $1,188,720.00.					
County Rate	2 3-10 M.	2,734 06	2,741 85	.....	7 79
Township	2 8-10 M.	3,328 41	3,332 52	.....	4 11
General School	1 9-10 M.	2,258 57	2,263 85	.....	5 28
1914 Assessment, $1,230,500.00.					
County Rate	2 2-10 M.	2,707 10	2,706 15	$0 95	
Township	2 3-10 M.	2,830 15	2,829 49	66	
General School	1 8-10 M.	2,214 90	2,214 78	12	
Thompson Bridge Deb.	½ M.	615 25	614 71	54	
1915 Assessment, $1,251,780.00.					
County Rate	3 3-10 M.	4,130 87	4,130 82	05	
Township	2 5-10 M.	3,129 45	3,128 68	77	
General School	1 8-10 M.	2,253 20	2,253 17	03	
Thompson Bridge Deb.	½ M.	625 89	626 87	..	98
1916 Assessment, $1,262,650.00.					
County Rate	8 8-10 M.	11,111 32	11,111 32	..	
Township	2 5-10 M.	3,156 62	3,156 65	..	03
General School	1 8-10 M.	2,272 77	2,272 76	01	
Bridge Deb.	1 M.	1,262 65	1,262 65	..	
Thompson Bridge	½ M.	631 32	.....	..	
Jersey Bridge	½ M.	631 33	.....	..	

LEVIES TO BE MADE FOR YEARS 1912 TO 1916.

	1912 By-Law 597	1913 By-Law 606	1914 By-Law 616	1915 By-Law 629	1916 By-Law 637
County Rate	$2,598 30	$2,595 78	$2,539 78	$2,782 60	$4,965 38
War Tax	.....	.....	.....	1,296 73	1,521 22
Township Rate	2,309 60	3,333 40	2,830 00	3,129 45	3,500 00
General School	2,309 60	2,175 00	2,175 00	2,175 00	2,175 00
Deb. Thompson Bridge	.....	.....	582 75	582 75	582 75
Deb. Jersey Bridge	.....	.....	.....	.....	689 60
Total General Rate	$7,217 50	$8,104 18	$8,127 53	$9,966 53	$13,433 95
School Section No. 1	$300 00	$350 00	$500 00	$500 00	$500 00
" " No. 2	500 00	700 00	700 00	600 00	600 00
" " No. 3	200 00	300 00	530 00	350 00	350 00
" Debenture 3	420 00	405 00	390 00	375 00	360 00
" " 4	350 00	400 00	500 00	500 00	500 00
" " 5	300 00	600 00	450 00	600 00	500 00
" " 6	300 00	496 67	450 42	700 00	450 00
" Note 6	.....	1,203 33	949 58	949 58	949 58
" " 7	150 00	200 00	208 00	350 00	300 00
Brownhill U. No. 8	93 00	51 00	70 00	77 84	85 00

TOWNSHIP OF NORTH GWILLIMBURY.

Tax Rates, Years 1912 to 1916.

	By-Law 597 1912 Mills	By-Law 606 1913 Mills	By-Law 616 1914 Mills	By-Law 629 1915 Mills	By-Law 637 1916 Mills
County Rate	2¼	2 3-10	2 2-10	2 3-10	7 8-10
War Tax	....	....	....	1	1
Township Rate	2	2 8-10	2 3-10	2 5-10	2 5-10
General School	2	1 9-10	1 8-10	1 8-10	1 8-10
Deb. Thompson Bridge	....	....	½	½	1
Deb. Jersey Bridge	....	....	....	....	....
Total General Rate	6¼	7	6 8-10	8 1-10	14 1-10
School Section No. 1	2½	2 8-10	4	4	4
" " No. 2	2½	3 6-10	3 5-10	2 9-10	2 8-10
" " No. 3	1	1 5-10	2 5-10	1 7-10	1 7-10
" Debenture No. 3	2¼	2 1-10	1 8-10	1 8-10	1 7-10
" " 4	2	2 5-10	3 1-10	1 8-10	3
" " 5	2½	4 9-10	3 5-10	4 6-10	3 9-10
" " 6	1¾	1 8-10	1 8-10	2 3-10	1 5-10
" Note 6	....	4 3-10	3 2-10	3 1-10	3
" " 7	1¾	2 4-10	5 7-10	4	3 5-10
Brownhill Union No. 8	9	5	6½	7	7 5-10

County Treasurer, in Account with Township of North Gwillimbury.

To arrears, 1911, returned Apr. 10, 1912	$79 97	
" 1912, " " 8, 1913	82 57	
" 1913, " " 8, 1914	349 17	
" 1914, " " 6, 1915	506 15	
" 1915, " " 7, 1916	519 68	
" 1916, " " 10, 1917	701 06	
By cash, received, Mar. 6, 1912		$74 44
" " Dec. 13, 1913		31 03
" " Apr. 18, 1914		45 21
" " " 9, 1915		258 08
" " Mar. 9, 1916		271 89
" " " 15, 1917		491 57
By Cash collected to 30 April, 1917, and held by County Treasurer		365 87
" Taxes written off per instructions of Council, 1912 and 1913		40 61
" Cash collected to 26 October, 1917, and held by County Treasurer		208 99
" Returned to Township, occupied return Sept., 1917		310 06
" Arrears on Roll at County Treasurer's office		595 97
To Interest added and arrears previous to year 1911 paid	455 12	.....
	$2,693 72	$2,693 72

Tax Collector, in Account with Township of North Gwillimbury.

1912.

To Total Taxes for collection, per Roll	$10,095 88	
By Amount paid to Treasurer to 31 Dec., 1912		$9,940 55
" " " " 30 Apr., 1913		71 76
" Returns to County Treasurer		82 57
" Geo. Nelson, dog tax not collected		1 00
	$10,095 88	$10,095 88

1913.

To Total Taxes for collection, per Roll	$14,124 55	
By Amount paid to Treasurer to 31 Dec., 1913		$13,394 81
" " " " 30 Apr., 1914		379 96
" Returns to County Treasurer		349 17
" Short collected (apparently Gifford Mann)		61
	$14,124 55	$14,124 55

1914.

To Total Taxes for collection, per Roll	$14,784 91	
By Amount paid to Treasurer to 31 Dec., 1914		$13,906 65
" " " " 30 Apr., 1915		367 95
" Return to County Treasurer		506 15
" Item on Page 5 of Roll for H. Curtis, apparently not added in summary by clerk. Collector settling on incorrect total..		4 16
	$14,784 91	$14,784 91

1915.

To Total Taxes for collection, per Roll	$16,755 54	
By Amount paid to Treasurer to 31 Dec., 1915		$15,818 66
" " " " 30 Apr., 1916		413 02
" Returns to County Treasurer		519 98
" J. Martin, dog tax, instructed by Council not to collect		1 00
" H. Smith, " " " " "		1 00
" Error in summary total. Collector settled on incorrect total		88
" Shortage in settlement		1 00
	$16,755 54	$16,755 54

1916.

To Total Taxes for collection, per Roll		$24,115 52	
By Amount paid to Treasurer to 31 Dec., 1916			$23,163 89
" " " " 30 Apr., 1917			243 63
" Returns to County Treasurer			701 06
" Items dropped—			
H. Smith, Statute Labour	$1 50		
Bert Clough, "	1 50		
Walter Sedore, "	1 50		
John Chelous, Dog Tax	2 00		
Joseph Cartes, Business Assessment	44		
			6 94
		$24,115 52	$24,115 52

Items in Cash Book—Not in Minute Book or Gravel Book.

Folio.	1912.	Amount.
96	R. Cole, repair culvert, May 14	$5 00
98	Bricken, J., gravel, Div. 11, July 10	10 50
98	S. Fairbarn, 14 loads cement, Aug. 5	2 10
98	J. Marcott, J.W., gravel, Div. 16, Aug. 15 (for 1911)	8 20
99	S. Winch, lumber, Aug. 26	1 00
99	Ira Morton, gravel, Div. 2, Oct. 28	20 90
99	S. Fairbarn, gravel, Div. 5, 25, 38, 20, 48, Oct. 28	37 20
99	F. Hamilton, gravel, Div. 36, Oct. 28	9 10
101	H. Kay, gravel, Div. 44, Oct. 16	2 70
101	Ira Morton, gravel, Div. 2-6, Oct. 16	16 80
101	F. Broadway, gravel, Div. 29, Oct. 16	7 10
101	Wm. King, gravel, Div. 20, 22, Oct. 16	14 30
101	Wm. Purdy, gravel, Div. 5, 7, 13, Oct. 16	27 50
101	A. Sedore, gravel, Div. 19, Oct. 16	5 90
101	A. Crydeman, gravel, Div. 24, 33, 34, Oct. 16	11 80
102	W. Rigler, gravel, Div. 1, Oct. 16	13 30
102	R. A. Hamilton, gravel, Div. 43, Oct. 16	9 10
102	J. Johnston, gravel, Div. 40, Oct. 16	10 00
104	J. King, gravel, Div. 8, 10, 42, Oct. 16	40 50
106	W. Maloney, gravel, S. Town Line, Div. 23	11 10

1913.

Folio.		*Amount.*
107	Ira Morton, gravel, 122 loads, Jan. 13	$12 20
107	D. Earl, attending Voters' List Court, 1912, Jan. 29	1 50
108	J. D. Davidson, discount on cheques, May 26	1 00
109	W. Mahoney, gravel, June 23	2 20
109	J. Breckon, gravel, Div. 11-19, July 24	15 00
110	J. King, gravel, Aug. 25	33 50
111	Wm. Marritt, rent of hall for Revision, Oct. 20	3 00
114	H. Kay, gravel, Div. 44, Oct. 15	5 30
114	F. Broadway, gravel, Div. 29-20, Oct. 15	8 90
114	E. Morton, gravel, Div. 4 and 2, Oct. 15	35 60
115	F. Hamilton, gravel, Div. 36, Oct. 15	8 60
115	J. Morton, gravel, Div. 20 and 17, Oct. 15	12 80
115	A. Crydeman; Oct. 15	13 30
115	Wm. King, gravel, Oct. 15	44 30
115	W. Rigler, gravel, Oct. 15	31 40
115	Brecon, J., gravel, Div. 47, Oct. 15	3 90
115	J. Anderson, gravel, Div. 4, Oct. 15	18 60
116	J. Sedore, gravel, Div. 35, Oct. 15	2 30
116	J. Marritt, gravel, Div. 15-39, Oct. 15	50 30
116	J. Johnston, gravel, Div. 23-40, Oct. 15	12 50
116	W. Mahoney, gravel, Div. 41, Oct. 15	13 05
116	J. Brecon, gravel, S. Town Line, Oct. 15	3 20
116	R. A. Hamilton, gravel, Div. 43, Oct. 15	9 60
117	Wm. Purdy, gravel, Div. 5, 6 and 13, Oct. 15	79 20
117	J. Edwards, gravel, Oct. 15	22 60
118	G. Fairbarn, gravel, Div. 24, Oct. 15	1 00
119	A. Hamilton, gravel, Div. 34, Oct. 15'	4 50
119	J. D. Davidson, gravel, Div. 24-26, Oct. 15	18 30

1914.

122	Joel King, gravel, Jan. 12	$2 30
122	S. E. Morton, Statute Labour refund, 1913, Jan. 12	16 00
122	J. A. Cryderman, gravel, Div. 28, 1913, Mar. 2	2 30
124	J. Marrett, Jnr., gravel, Div. 18, 1913, June 18	8 60
127	Pay Roll No. 9, South Town Line, Aug. 24	149 10
132	G. Hamilton, selecting jurors, Nov. 30	6 00
133	P. Chappell, gravel, East Town Line, Dec. 3	4 00
134	H. Kay, gravel, Div. 37-44, Dec. 15	9 10
135	J. Nelson, sheep valuator, Dec. 15	1 00

1915.

140	J. Jones, gravel, R.D. 3, 1914, May 17	$2 50
140	Pay Roll No. 1, Sec. 49, R.D. 12, June 2	175 00
147	Pay Roll No. 1, Sec. 49, R.D. 12, June 2	9 30
140	A. Cameron, livery, re Thompson Bridge, June 2	1 50
143	Wm. King, gravel, Div. 26, 45, 20, 22, Nov. 29	34 70

1916.

4	D. E. Sprague, Voters' List Court, Oct. 16	$3 00
6	Pay Roll No. 5, Oct. 30	74 50
6	T. Mann, work on R.D. 16, Dec. 15	6 00

SCHOOL TAXES AND DISPOSITION OF SAME BY TOWNSHIP, YEAR 1912.

Section.	Trustee and Special Taxes Collected.	Presumed Share of General School Tax.	Total Taxes Applicable to School.	Amount paid to School.	Underpaid to School.	Over-paid to School.
S.S. 1	$305 38	$300 00	$605 38	$605 37	$0 01	.....
" 2	489 91	300 00	789 91	780 25	9 66	.....
" 3	194 50	300 00	494 50	528 21	.....	$33 71
" 3 Debenture	448 48	.....	448 48	420 00	28 48	.....
" 4	318 40	300 00	618 40	620 00	.....	1 60
" 5	318 25	300 00	618 25	618 25	.....	.....
" 6	323 52	300 00	623 52	622 00	1 52	.....
" 6 Note redemption	nil	.....	.....	.....	.....	.....
" 7	147 23	300 00	447 23	449 53	.....	2 30
" 8	94 05	75 00	169 05	131 55	37 50	.....
Totals	$2,639 72	$2,175 00	$4,814 72	$4,775 16	$77 17	$37 61
Total taxes collected by Township—Trustee				$2,191 24		
Special				448 48		
General				2,309 60		
					$4,949 32	
Amount paid over to Schools as above					4,775 16	
Retained by Township					$174 16	

YEAR 1913.

S.S. 1	$353 92	$300 00	$653 92	$650 00	$3 92	
" 2	696 92	300 00	996 92	1,000 00	.....	$3 08
" 3	303 08	300 00	603 08	600 00	3 08	
" 3 Debenture	424 31	.....	424 31	405 00	19 31	
" 4	423 11	300 00	723 11	700 00	23 11	
" 5	603 68	300 00	903 68	900 00	3 68	
" 6	504 51	300 00	804 51	796 67	7 84	
" 6 Note redemption	1,204 90	.....	1,204 90	1,203 33	1 57	
" 7	206 95	300 00	506 95	500 00	6 95	
" 8	53 25	75 00	128 25	126 00	2 25	
Totals	$4,774 63	$2,175 00	$6,949 63	$6,881 00	$71 71	$3 08
Total taxes collected by Township—Trustee				$3,145 42		
Special				1,629 21		
General				2,263 85		
					$7,038 48	
Amount paid over to Schools as above					6,881 00	
Retained by Township					$157 48	

SCHOOL TAXES AND DISPOSITION OF SAME BY THE TOWNSHIP, YEAR 1914.

Section.	Trustee and Special Taxes Collected.	Presumed Share of General School Tax.	Total Taxes Applicable to School.	Amount paid to School.	Underpaid to School.	Over-paid to School.
S.S. 1	$505 00	$300 00	$805 00	$804 60	$0 40	.....
" 2	707 27	300 00	1,007 27	1,007 70	.....	$0 43
" 3	525 00	300 00	825 00	811 36	13 64	.....
" 3 Debenture	378 00	.....	378 00	590 00	.....	212 00
" 4	501 96	300 00	801 96	801 96	.....	.....
" 5	458 15	300 00	758 15	757 15	1 00	....
" 6	543 97	300 00	843 97	843 20	0 77	.....
" 6 Note redemption	963 70	.....	963 70	964 47	.....	0 77
" 7	210 86	300 00	510 86	510 86	.....	.....
" 8	71 77	75 00	146 77	146 77	.....	.....
Totals	$4,865 68	$2,175 00	$7,040 68	$7,038 07	$15 81	$13 20
Total taxes collected by Township—Trustee				$3,523 98		
Special				1,341 70		
General				2,214 78		
					$7,080 16	
Amount paid over to Schools as above					$7,038 07	
Retained by Township					$42 39	

YEAR 1915.

S.S. 1	$502 60	$300 00	$802 60	$802 60	.....	.....
" 2	601 63	300 00	901 63	901 34	$0 29	.....
" 3	364 14	300 00	664 14	672 70	.....	$8 56
" 3 Debenture	385 56	.....	385 56	375 00	10 56	.....
" 4	507 45	300 00	807 15	807 90	.....	0 45
" 5	605 59	300 00	905 59	905 59	.....	.....
" 6	711 39	300 00	1,011 39	1,011 34	0 05	.....
" 6 Note redemption	959 35	.....	959 35	959 68	.....	0 33
" 7	349 78	300 00	649 78	650 30	.....	0 52
" 8	77 70	75 00	152 70	179 80	.....	27 10
Totals	$5,065 19	$2,175 00	$7,240 19	7,266 25	$10 90	$36 96
Total taxes collected by Township—Trustee				$3,720 28		
Special				1,344 91		
General				2,253 17		
					$7,318 36	
Amount paid over to Schools as above					7,266 25	
Retained by Township					$52 11	

SCHOOL TAXES AND DISPOSITION OF SAME BY TOWNSHIP, YEAR 1916.

Section.	Trustee and Special Taxes Collected.	Presumed Share of General School Tax.	Total Taxes Applicable to School.	Amount paid to School.	Underpaid to School.	Over-paid to School.
S.S. 1	$512 00	$300 00	$812 00	$812 00	.....	.....
" 2	592 43	300 00	892 43	896 73	.....	$4 30
" 3	365 93	300 00	665 93	671 86	.....	5 93
" 3 Debenture	365 93	.....	365 93	360 00	$5 93	.....
" 4	494 48	300 00	794 48	794 98	.....	0 50
" 5	513 63	300 00	813 63	813 63	.....	.....
" 6	468 19	300 00	768 19	775 53	.....	7 34
" 6 Note redemption	936 38	.....	936 38	951 06	.....	14 68
" 7	305 82	300 00	605 82	605 82	.....	.....
" 8	83 25	75 00	158 25	158 25	.....	.....
Totals	$4,638 04	$2,175 00	$6,813 04	$6,839 86	$5 93	$32 75

Total taxes collected by Township—Trustee	$3,335 73		
Special	1,302 31		
General	2,272 76		
		$6,910 80	
Amount paid over to Schools as above		6,839 86	
Retained by Township		$70 94	

REPORT OF A. F. FALLS, F.C.A., CHARTERED ACCOUNTANT, OF CHATHAM, ONTARIO, ON THE MUNICIPALITY OF THE TOWN OF PETROLIA.

Under the authority of Section 10, Chapter 84, of the Statutes of the Province of Ontario, and by appointment of the Provincial Municipal Auditor, confirmed by an Order-in-Council bearing date the 20th day of December, 1917, I, A. F. Falls, of the City of Chatham, Chartered Accountant, have made an inspection, examination and audit of the books, accounts, vouchers and money of the Municipal Corporation of the Town of Petrolia, in the hands of the Treasurer and Collector thereof, for the year, 1917, and report as follows:—

In pursuance of the said authority and instructions, an audit has been made of the various accounts of the Corporation.

The audit covered the Books and Accounts of the Town of Petrolia.

The Water Commissions.

The Hydro Commissions.

The C. E. Englehart Hospital Board.

The Public School Board.

The High School Board.

The audit of the Accounts of the Town of Petrolia, included the books and accounts of the Clerk, Treasurer, Collector, Chief of Police, and Police Magistrate.

The Assessment Roll has been compared with the 1917 Tax Roll, the rates on the 1917 Tax Roll are in conformity with the By-law striking the rates.

Taxes.

The Collector of Taxes had in his hands on Dec. 31, 1917, the Tax Rolls for the years 1915, 1916 and 1917.

In January, 1918, the 1915 Roll was returned to the Treasurer. The Council should pass on the final settlement of the Tax Roll and authorize the writing off of $137.00 which it is found cannot be collected or returned against lands.

The Collector still has in his hands the Rolls of 1916 and 1917.

It is contrary to the Acts to allow Tax Rolls to remain in the Collector's hands after Feb. 1st following the year in which the taxes are imposed. The Rolls should be returned to the Treasurer before May 1st, so that the 10 per cent. can be added.

The delay in returning the Rolls has occasioned a considerable loss in interest to the Town.

Unless the rolls are promptly returned to the Treasurer each year he cannot return arrears of taxes to the Clerk to go on the proper Rolls before offering the land for sale for taxes as is required by the Act.

Arrears of Taxes.

All arrears of taxes in the Treasurer's hands are years previous to 1915; most of these have been included in the 1916, or previous Tax Sale List. The estimated valuation placed by the Treasurer on these is $400.00.

Poll Tax.

During 1915 and 1916 only a very small amount was collected. For 1917 no poll taxes were collected.

Fines.

The Police Magistrate's records were examined and found in order.

Insurance.

A list of insurance on the buildings, etc., of the Town and various Commissions and Boards is attached. Suggestion was made to remedy defects in some of the policies to make them concurrent.

Bonds.

The Bonds of the different Officials have been examined.

John McHattie, Secretary of Board of Water Commissioners, has a bond of $2,000.00 in London Guarantee & Accident Company, the premium of which is paid to April 17, 1918.

John Sinclair, Collector of taxes for the year 1916, has a bond of $4,000.00 signed by John Sinclair, M. Smith and Robt. Jackson; and for the taxes for the year 1917, a bond of $4,000.00 signed by John Sinclair, Matthew Smith and Chas. Willson.

The bond of Chas. Eagan, Treasurer, is dated Aug. 7, 1902, signed by Chas. Eagan for $5,000.00 and J. H. Fairbank, $5,000.00. As Mr. Fairbank is deceased a new bond should be procured.

J. J. Matthews, Secretary-Treasurer of Public School Board, has a bond of $1,000.00 in Dominion of Canada Guarantee & Accident Company.

The Treasurer of the High School Board has no bond as required by Sec. 23, Chap. 268, R.S.O. 1914.

It is the duty of the Council yearly to inquire into bonds.

Cemetery.

The land in a Cemetery ordinarily cannot be included as an asset of a Municipality, but in the case of Petrolia where part of the Cemetery property is rented for pasture and is assessed as farm lands in the Township of Enniskillen on which the Town pays taxes yearly, that portion is included as a fixed asset at its assessed valuation, $1,000.00.

Public School Board.

A statement of the receipts and expenditures of the Board is attached. A list of insurance on all the property of the Board is included. The School properties are the property of the Board and cannot be included as an asset of the Town.

High School Board.

There is a statement of the insurance on the School property.

In the previous annual statements of the Town there was included as a liability the money requisitioned by the Board for 12 months. There was no year in which was levied the amount required by the Board for two years. As $3,000.00 was raised on 1917 Roll and $2,800.00 drawn, there is included $200.00 as a liability of the Town.

The liability of the Town as shown by the Auditors at the end of Dec., 1909, and for years after, not only included the requirements of the High School Board but also included the requirements for the Public School Board for the following year, as if the requirements of each of the Boards had been collected a year in advance.

Hydro Commission.

A statement of the Assets and Liabilities and operating of the Commission for 1917 is attached.

It has not been customary to take into account as an Asset the unpaid December power and light sold nor as a liability the December bill for power purchased. The unpaid November accounts for light and power sold customers, $205.25, were not included as an asset by the Commission and are not included in the attached statements.

After taking care of the Hydro Debentures and interest which matured in 1917, the Commission was able to set aside $1,120.00 for reserve for depreciation.

Waterworks.

The Commissioners do not keep a separate bank account. All receipts from Water rates are deposited in the bank to the credit of the Town in the Treasurer's bank account. The Commissioners issue their own orders which are charged to the Town account and are separated in the Treasurer's Cash Book from the other Town transactions.

During the year 1917 the cost of fuel and the damage to the intake pipe by ice has caused a very much larger expenditure than former years and has resulted in a deficit in this department for 1917 of nearly $4,000.00, as shown in the attached statement. The cost of fuel alone for 1917 was nearly as great as the entire operating expenses of the previous year.

The Hydro lines are only a few miles from the pumping station. It might be possible to arrange so that the operating cost could be reduced and prevent a repetition of the unfavorable showing.

The water rates were advanced recently and are higher than in other Municipalities that I have visited. The rates are practically all flat rates, very few meters are in use. It is stated that sand clogs the meters and it would not be practical to use meters generally. The pumping reports bear out the record of all Municipalities where flat rates are charged. A very much greater quantity of water is pumped than where all water is metered.

A supply of pure water is of such vital importance to the community, every effort should be exerted to procure means of pumping at a lower cost than in 1917 or there will be a serious deficit in 1918. The Waterworks Commissioners are empowered under the Act to charge water rates on vacant lots that have water mains in front of them.

In former Audit reports the available assets and current liabilities of the Water Commission were included with the statement of the finances of the Town.

In the attached statements the uncollected water rates and coal on hand estimated. $457.36
700.00

$1,157.36.

are not included with the assets of the Town, nor are the unpaid accounts amounting to $531.97 included as a liability, but are in the statement of the Water Commissioner.

Local Improvements.

On September 5th, 1911, the Council passed a By-law in connection with the construction of sidewalks and pavements in which it states that 60 per cent. of the cost shall be paid by and chargeable to the land abutting directly on the work and the remaining 40 per cent. of the cost shall be paid by the Corporation.

The actual result of the above By-law in regard to pavements which have been constructed is as follows: The annual payment of Pavement Debentures and interest is $4,884.76, of which only $2,333.56 is paid for by taxes on lands; the Town's portion is $2,551.20. The Town instead of paying 40 per cent. of the cost of pavements is paying over 52 per cent.

This should have the careful consideration of the Council before any further local improvements are gone on with.

The Collector.

The Collector's records are well kept. The fact that the Tax Rolls are not returned more promptly is not the fault of the Collector, but of the Council, who should insist on the return of the Rolls at the proper time. No Collector should have the Tax Rolls of more than one year in his hands at one time.

The Collector should enter in the Rolls the year as well as the month and date on which taxes are paid.

The Clerk.

The books and records in the Clerk's office are exceptionally well kept. It never has been my privilege to audit Tax Rolls more carefully and accurately prepared. The Clerk is also Secretary of the Water Commissioners and his records are all in proper order.

The Treasurer.

The Treasurer's Cash Book is well kept. The arrears of tax record has been entered in ledger form with an account for each property against which taxes have been returned to the Treasurer unpaid.

The arrears of the 1915 Tax Roll returned Jan. 22nd, 1918, to the Treasurer are now being entered up.

No ledger has ever been kept in which accounts for the fixed and other assets, as well as all liabilities of the Municipality, would be shown.

Debentures.

Attached is a statement of the amount of unpaid principal of each issue of Debentures maturing after Dec. 31, 1917, amounting to $285,577.13.

During the last few years the amount of Debenture liability has been increased. The Wagon Works bonus of $30,000.00 with annual payment of $2,510.39 represents over 2 mills on the 1917 Tax Rolls. The 1917 Floating Debt Debentures with annual payment of $2,397.58. These come out of the General Tax rate.

In 1925 the last payment of the Waterworks debentures will be made. There will be no large reduction in the annual debenture payment till 1926.

Under the Act of 1917, authority was given to issue $5,000.00 in 1917 to lighten the debenture burden maturing that year. No debentures have yet been issued to relieve 1917 as the Officials wanted to see the result of the Auditor's report before issuing them, and were in hopes that they might be able to get along without having to issue them for 1917. There is a deficit on Dec. 31, 1917, of $5,928.19. The only means of meeting this is by the issue of the $5,000.00 debentures.

Fixed Assets.

Information in regard to the value of the various fixed assets of the Municipality is more or less an estimate, as no ledger has ever been kept. The Waterworks System is included in this report at the estimated value of $190,000.00.

Hydro System is taken in as an asset of the Town at the actual figures at which the fixed assets are in the books of the Hydro Commission.

Town Hall, Market buildings, land, furniture, etc., is estimated at $48,000.00. Victoria Park estimated at $10,000.00, McKee property at what it cost, $1,600.00. Isolated Hospital at $200.00.

Part of the Cemetery not used for burial purposes but rented for pasture and which is assessed in the Township of Enniskillen in which it is located, at $1,000.00, and on which the Town pays taxes is included as an asset of the Town at a valuation of $1,000.00

The East End Fire Hall and fire appliances are included at $1,500.00 and $6,000.00, respectively.

The School properties are not included in the statement of fixed assets of the Town; they are not owned by the town but by the School Boards.

Assets and Liabilities.

All known assets and liabilities of which there is any record or account presented, or which the Officials could give any information about are included in the attached statements. Some of these should have been included in the statements of previous years.

Arrears of taxes, unpaid taxes and other assets are included at the full value as estimated or recorded and should there be any deductions, then the amount of deficit shown will be increased.

Financial Position.

The attached balance sheet as at Dec. 31, 1917, shows the amount of the current liabilities, $45,551.56, with the available assets, $39,623.37, leaving a deficit of $5,928.19.

These figures are based on the floating debt debentures issued in 1917, maturing after Dec. 31st, 1917, amounting to $26,752.42, being sold at par, which are held by the Bank of Toronto as security for overdraft.

The granting of bonuses, the large portion of local improvements assumed by the Town, and the portion of debentures and interest payable annually takes a large portion of the general tax rate and with the salaries and fixed expense that cannot be reduced leaves a very small portion of the taxes that are controllable.

The excessive cost of the Waterworks operations for the year 1917 paid for out of the general funds of the Town has caused such a serious deficit to be shown, and there is every appearance at present that for 1918 the cost will be excessive.

The financial position is such that no expenditures should be made that can possibly be avoided. One item as an example might be mentioned, grant to the Board of Trade. If the Board of Trade require money let it be raised by membership fees or subscriptions, and not burden the Town with obligations its finances cannot stand.

Recommend.

That Collector enter in Tax Rolls the year in which he receives taxes as well as date and month.

That Tax Rolls of 1916 and 1917 be returned before May 1st, 1918, so the Treasurer can add 10 per cent.

That the estimates on which the tax rate is based be entered in the Minutes of the Council as a report from the Finance Committee.

That the Council confirm the Collector's final settlement of each year's Tax Roll when he makes his return to the Treasurer, and by resolution write off the uncollected business or other taxes that cannot be collected or charged against lands.

Conclusion.

Detailed statements are not furnished as the Council have appointed local Auditors who are furnishing details, and it would be unnecessary expense to give the details twice.

The financial affairs of Petrolia are such that every item of expenditure should be carefully considered by the Council before being passed.

The Officials and all others with whom I have come in contact have throughout evinced the utmost willingness to assist in the examination and audit and have rendered substantial assistance.

I shall be pleased at any time to furnish further explanations or to advise with the Council or Officials in reference to any of the matters or recommendations contained in this report.

Yours very truly,

A. F. Falls,

For Provincial Municipal Auditor.

Chatham, Ont., Feb. 19th, 1918.

Cost of this audit, $202.60.

TOWN OF PETROLIA.

Schedule 1.

Abstract of Receipts for Year 1917.

Arrears of Taxes	$229 44
Taxes, 1915 Roll	246 00
" 1916 "	6,940 00
" 1917 "	44,630 00
Dog Taxes	180 00
Government Public Schools	86 75
Rents—House, $80.00; Town Hall, $83.00	163 00

	Licenses—			
	Billiards	$135 50		
	Livery	63 00		
	Push Cart	10 00		
			208 50	
	Debentures sold—Hydro		15,561 74	
	Fines		563 50	
	Market Scales		122 15	
	Cemetery—			
	Sale of lots	$296 00		
	Care of graves	253 25		
	Rent of field for pasture	55 00		
			604 25	
	Land sold Flax Co.		208 00	
	Elmira Knitting Co.		250 00	
	Oiling Egan Avenue		10 00	
	Wood sold		48 00	
	Interest on Debenture Savings Account		15 18	
	Ontario Government Railway Tax		68 54	
	County Soldiers' Insurance paid		364 46	
	Garbage collection		121 60	
	Repairs to Roads, etc.		91 73	
	Poll Tax, 1916		8 00	
	E. D. Smith, Packing Co. Debenture due		751 10	
	Hydro Commission, Debentures due		3,715 97	
				$75,187 91
	Water Rates from Waterworks Commission			20,022 78
1917 Dec. 31	Overdraft Bank of Toronto			40,277 06
				$135,487 75

Schedule 2.

ABSTRACT OF DISBURSEMENTS FOR YEAR 1917.

1916 Dec. 31	Overdraft Bank of Toronto			$31,662 59
1917 Dec. 31	Salaries and Allowances		$4,509 92	
	Printing, Advertising, Postage and Stationery		817 19	
	Soldiers' Insurance		364 43	
	Insurance Town Property		281 10	
	Fire, Water, and Light		8,499 94	
	Law Costs		360 18	
	Roads and Bridges		2,489 40	
	Charity		272 13	
	Public School Board		11,586 75	
	High School Board		2,800 00	
	Debenture principal paid		19,933 04	
	Debenture interest paid		11,975 17	
	County Rate, including War Tax		4,750 08	
	Market		151 02	
	Interest on Loans and Overdraft		2,068 15	
	Cemetery		162 78	
	Board of Health		223 84	
	Town Hall		438 39	
	C. E. Englehart Hospital Grant		1,000 00	
	Miscellaneous Grants		355 00	
	G. Lucas, Inspector, for fines		70 00	
	J. W. Ferguson, Chief, share of fines		41 00	
	J. Artis, Garbage collection		175 00	
	Miscellaneous		313 15	
	Hydro Commission, Debentures sold		15,511 79	
				$89,149 45
	Water Commissioner's Maintenance			14,675 71
				$135,487 75

Schedule 3. December 31, 1917.

PUBLIC SCHOOL BOARD.

Receipts.

1916			
Dec. 31	Balance on hand		$66 44
1917			
Dec. 31	Town of Petrolia	$11,500 00	
	Government Grants	240 35	
	Miscellaneous	15 00	
			11,755 35
			$11,821 79

Disbursements.

	Teachers' Salaries	$8,445 00	
	Janitors	953 50	
	Secretary	85 00	
	Fuel	536 00	
	Light	6 00	
	Insurance	6 00	
	Water	188 75	
	Repairs	279 49	
	Supplies, etc.	314 82	
	Expense and Postage	13 41	
			$10,828 06
1917			
Dec. 31	Balance on hand		993 73
			$11,821 79

Schedule 4. December 31, 1917.

HIGH SCHOOL BOARD.

Receipts.

1916			
Dec. 31	Balance. Cash on hand in Bank		$459 81
1917			
Dec. 31	Town of Petrolia	$2,800 00	
	County Grant	2,093 31	
	Government Grant	531 31	
	Super. Fund	79 75	
	Entrance and Examination Fees	68 18	
	Interest on Bank account	14 45	
			5,587 00
Dec. 31	Bank Overdraft		64 74
			$6,111 55

Disbursements.

1917			
Dec. 31	Teachers' Salaries	$4,960 00	
	Janitor	200 00	
	Secretary	25 00	
	Gas	234 44	
	Light	6 29	
	Water	54 75	
	Examinations	94 76	
	Murescoing	55 00	
	Insurance	30 00	
	Repairs	189 03	
	Supplies, etc.	262 28	
			$6,111 55
			$6,111 55

Schedule 5. December 31, 1917.

CHARLOTTE ELEANOR ENGLEHART HOSPITAL.

Receipts.

	Government Grant	$750 68	
	County Grant	900 00	
	Petrolia Grant	1,000 00	
	Donations	2,373 36	
	Patients, etc.	5,606 59	
			$10,630 63
1917			
Dec. 31	Bank of Toronto Overdraft		753 75
			$11,384 38

Disbursements.

Salaries	$2,006 29	
Wages	1,827 10	
Fuel	475 86	
Light	223 88	
Repairs	387 46	
Insurance	156 25	
Water	75 00	
Hay and Straw	94 28	
Advertising, etc.	6 50	
Grounds	71 30	
Contingencies	424 36	
Ice	40 06	
Laundry	720 72	
Groceries	1,533 33	
Meat	370 97	
Milk	62 82	
Butter and Eggs	490 32	
Drugs and Medicines	503 74	
Medical and Surgical supplies	76 39	
Bedding and Linen	475 10	
		$10,021 73
1916		
Dec. 31	Bank Overdraft	1,362 65
		$11,384 38

Schedule 6. December 31, 1917.

HYDRO-ELECTRIC COMMISSION.

Assets.

Fixed Assets:			
	Substation Equipment	$2,360 59	
	Distribution System, Overhead	21,901 14	
	Line Transformers	7,210 94	
	Meters	5,060 38	
	Street Lighting Equipment, Regular	818 01	
	Street Lighting Equipment, Ornamental	3,864 07	
	Miscellaneous Construction Expense	4,559 62	
	Old Plant	3,389 94	
			$49,164 69
Available Assets:			
	Inventories	$2,893 27	
	Accounts Receivable	1,615 32	
			4,508 59
			$53,673 28

Liabilities.

Deferred Liabilities:		
Debenture Principal		$48,599 26
Current Liabilities:		
November Power Account	$1,020 82	
Accounts Payable	843 69	
Bank Overdraft	452 77	
		2,317 27
Reserve, etc.:		
Debenture Principal paid	$1,400 74	
Depreciation Reserve	1,120 00	
Surplus, 1916, profit	70 83	
Surplus, 1917, profit	165 18	
		2,756 75
		$53,673 28

Schedule 7. December 31, 1917.

HYDRO-ELECTRIC COMMISSION.

Operating Account:		
Earnings for twelve months ending November 30, 1917:		
Domestic Light	$3,346 54	
Commercial Light	3,837 48	
Commercial Power	6,666 29	
Street Lighting	3,436 04	
Miscellaneous	1,194 88	
	$18,481 23	
Expenses for twelve months ending December 31, 1917:		
Power purchased, December 1, 1916, to December 1, 1917..	$9,593 76	
Distribution Operating and Maintenance	811 64	
Street Operating and Maintenance	429 09	
General Office Salaries and Expense	2,364 81	
Undistributed Expense	62 28	
Interest and Fixed Charges	3,934 47	
Depreciation Charges	1,120 00	
Net Profit	165 18	
	$18,481 23	

Schedule 8. December 31, 1917.

WATERWORKS COMMISSION.

Revenue.

Collected in 1917:		
Arrears, 1916	$266 15	
Rates, 1917	19,742 73	
Meters, 1917	13 90	
		$20,022 78
Water Rates Uncollected:		
1914	$39 53	
1915	39 21	
1916	43 19	
1917	335 43	
		457 36
Inventory, estimated value of coal on hand		700 00
		$21,180 14
Amount the Waterworks for 1917 came short of being self-sustaining		3,974 32
		$25,154 46

Expenditure.

	In Town.	Pumping Station.	Total.
Salaries	$855 00	$1,980 00	$2,835 00
Supplies	26 43	685 38	711 81
Repairs	52 20	1,489 54	1,541 74
Printing and Stationery	25 50	.....	25 50
Miscellaneous	86 08	.....	86 08
Fuel	.....	8,124 31	8,124 31
Telephone	.....	175 00	175 00
Insurance	.....	110 25	110 25
Intake Repairs	.....	1,066 02	1,066 02
	$1,045 21	$13,630 50	$14,675 71
Accounts 1917 Outstanding			531 97
Waterworks Debenture and Coupons			9,946 78
			$25,154 46

Schedule 9. December 31, 1917.

Debenture Liability.

Unpaid Principal Maturing after December 31, 1917.

By-law.	Undertaking.	
511	Waterworks	$66,968 99
605	Johnston Suit	2,591 32
670	Market Improvement	2,190 19
712	Bear Creek Bridge	2,456 83
754	Cement Sidewalk Consolidated	2,713 02
758	Consolidated Petrolia	10,062 13
769	Cement Sidewalks Consolidated	2,041 38
773	Central Petrolia School	12,690 82
778	Consolidated Debentures	2,986 12
794	Central Public School	1,572 21
796	Consolidated Account	1,692 51
839	Waterway Bridge	2,622 68
840	Construction of Sewer	156 79
841	Petrolia and Oil Streets Sewer	389 99
846	Vitrified Brick Pavement	1,923 13
847	Vitrified Brick Pavement	8,266 52
858	Granolithic Sidewalks	274 39
859	Granolithic Sidewalks	648 87
875	Canning Factory Site	2,042 69
884 & 891	Vitrified Brick West of M. C. R.	10,008 35
885 & 892	Granolithic Walks	313 36
894	Vitrified Brick	10,921 23
933	Market Square and Flour Mill	642 87
934	Consolidated Local Improvement	1,399 52
958	Market Building	1,665 80
965	Tarlithac Pavements	8,854 07
981	Consolidated Sidewalks	2,895 39
982	Glazed Tile Sewer	531 52
984 & 5	Sewers	506 04
990	Trunk Sewer Outlet	4,164 46
998	Wagon Works Bonus	26,264 00
1017	Station Street Sewer	252 51
1021	East End Tile Drain	127 54
1028	Huggard Sewerage	7,391 92
1060	Granolithic Walks	511 72
1061	Interswitch Site	970 26
1065 & 8	Flax Mill Site	1,434 31
1066 & 9	Miscellaneous Sewers, etc.	7,080 00
1034	Hydro-Electric	34,007 03
1085	Hydro Extension	14,592 23
1089	Floating Debt	26,752 42
		$285,577 13

Schedule 10.

INSURANCE.

Town Property.	On Buildings.	On Contents.
East End Fire Hall:		
Norwich Union, February 21, 1919	$1,000 00	
McKee Property:		
British American Assurance Co., Nov. 10, 1919	800 00	
Town Hall:		
Western, Oct. 6, 1918	2,000 00	
London & Lancashire, Oct. 6, 1918	2,000 00	
Liverpool, London & Globe, Oct. 6, 1918	1,000 00	1,000 00
London Guarantee & Accident, Oct. 6, 1918	1,500 00	500 00
Norwich Union, Oct. 6, 1918	1,000 00	1,000 00
Guardian, Oct. 6, 1918	2,000 00	
Market Building:		
Canadian Fire, Sept. 19, 1919	600 00	
Isolated Hospital:		
London Assurance Co., April 17, 1918	200 00	
Water Commissioners:		
Storehouse and Pumping Station, Perth Mutual, Jan. 29, 1920	300 00	
Engineer's Dwelling House, Phoenix of Hartford, Dec. 3, 1920	1,000 00	
Pumping Plant, Mercantile, Dec. 3, 1920	1,000 00	2,250 00
Sun, Dec. 2, 1920	1,000 00	2,250 00
High School Board:		
Northern, Aug. 18, 1920	4,000 00	
Atlas, Aug. 17, 1919	.....	1,000 00
Charlotte E. Englehart Hospital:		
Globe & Rutgers of New York, May 25, 1920:		
Hospital building	12,000 00	
Frame building	1,200 00	
Hospital contents	.....	3,500 00
M. Daniels' Dwelling:		
Queen Insurance Co., May 12, 1920, building	450 00	
Hydro-Electric Commission:		
Mercantile, May 4, 1918, on stock	.....	1,300 00
Mercantile, May 4, 1918, on fixtures	.....	200 00
Public School Board:		
Central School:		
Queen, Oct. 1, 1918	3,000 00	
Liverpool & Manitoba, Dec. 22, 1918	3,000 00	
Insurance Co. of North America, Oct. 1, 1918	3,000 00	
Liverpool, London & Globe, Nov. 14, 1918	3,000 00	
Liverpool, London & Globe, June 6, 1918	.....	600 00
East End School:		
Norwich Union, Jan. 4, 1919	1,500 00	
Alliance, 1918	1,500 00	
Maud St. School:		
London Mutual, Sept. 9, 1919	800 00	200 00
Perth Mutual, Sept. 9, 1919	800 00	200 00
Eureka St. School:		
Royal, Sept. 8, 1919	1,700 00	500 00
Principal's Dwelling:		
Mercantile, May 5, 1920	600 00	

Schedule 11.

CURRENT LIABILITIES OUTSTANDING, DEC. 31, 1917.

Lambton Corn Growers' Association, grant	$100 00
Poultry Association, grant	50 00
Township of Enniskillen on Drains (disputed)	164 00
Township of Enniskillen, 1917 taxes on cemetery pasture	21 40
Fielder Paving Contract withheld	832 19

Westramite Paving Co., guarantee, less repairs	594 21
John Sinclair, Collector, 1915 taxes	150 00
John Sinclair, Collector, 1916 taxes	150 00
John Sinclair, Collector, 1917 taxes	150 00
Hydro streets, December	286 17
Hydro, hall, December	7 92
Mrs. Wm. Hopwood, laundry fireman	9 00
A. S. Code, sanitary plans	101 35
Dr. McAlpine, M.H.O. to Dec. 31, 1917	450 00
R. Kettle, wood for relief	7 50
Wm. Northcott, wood for relief	5 60
Jas. Pittman, paid for relief	14 00
J. W. Ferguson, half fees, 1917	35 66
J. McHattie, B. M. & D.	26 00
R. Kettle, gravel, etc.	6 00
G. W. Tel. Co.	1 08
Petrolia Utilities Co., Ltd., Dec.	45 03
Wm. McDonald, repairs	2 75
Topic	20 56
Karr & Rose, tile	3 05
D. & S. Pollard, supplies	13 90
J. Lowrey, supplies	8 52
J. & J. Kerr Co., Ltd., supplies	10 13
Bell Telephone Co.	1 20
Moncrieff & Wilson, law costs	234 98
Line fence, Thompson and Crude Oil Co., tax roll, 1917	41 00
High School Board	200 00
Coupons due, Dec. 31, 1917	1,447 60
Coupons due, Dec. 31, 1916	6 60
Chas. Eagan, Sec. G. D. Park Assn., refund 1917 taxes	77 10
	$5,274 50

Balance Sheet.

Schedule 12.

Assets, December 31, 1917.

Available Assets:		
Arrears of taxes, estimated	$400 00	
Tax roll, 1915, returned January 22, 1918	762 82	
Tax roll, 1916, in collector's hands	1,722 12	
Tax roll, 1917, in collector's hands	8,869 59	
Rent due, hall and house	71 00	
Cemetery collections, since paid	98 00	
Market receipts, since paid	14 10	
License, C. Richmond	12 00	
Street watering and oiling to go on 1918 roll	471 00	
Local improvement advances	443 30	
Savings bank account to pay 1916 coupon	7 02	
Debentures issued, 1917, less one due 1917, held by bank against overdraft	26,752 42	
		$39,623 37

Fixed Assets:	Estimated Values.	
Waterworks system	$190,000 00	
Hydro-Electric System, actual cost	49,164 69	
Town Hall, Market Building, land, etc.	48,000 00	
Victoria Park	10,000 00	
McKee property	1,600 00	
Isolated Hospital	200 00	
Cemetery, pasture, portion only	1,000 00	
East End Fire Hall property	1,500 00	
Fire Department equipment	6,000 00	
		$307,464 69

Passive Assets:		
C. E. Englehart Hospital overdraft guaranteed	$753 75	
Public School debentures, levies on lands	14,263 03	
Local Improvement debenture, levies on lands	40,339 32	
		$55,356 10
		$402,444 16

Schedule 12.

LIABILITIES, DECEMBER 31, 1917.

Current Liabilities:		
Outstanding accounts, etc., as per Schedule 11	$5,274 50	
Bank of Toronto overdraft against which they hold debentures unsold, $26,752.42	40,277 06	
		$45,551 56
Current liabilities	$45,551 56	
Available assets	39,623 37	
Deficit, 1917	$5,928 19	
Deferred Liabilities:		
Local Improvement debentures, principal	$60,127 26	
Public School debentures, principal	14,263 03	
Waterworks debentures	66,968 99	
Hydro debentures	48,599 26	
Other issues of debentures	95,618 59	
		$285,577 13
Contingent Liabilities:		
C. E. Englehart Hospital, overdraft guaranteed	$753 75	
Lambton Packing Co., agreement: The town is to refund them $750.10 each year, 1921, 1922, 1923, providing they operate in those years	2,250 30	
		$3,004 05
		$334,132 74
Assets exceed liabilities		68,311 42
		$402,444 16

TOWNSHIP OF CHARLOTTENBURGH.

32 CHURCH STREET, TORONTO, ONT., 27th March, 1918.

To the Reeve and Council of the Township of Charlottenburgh, Ontario, Canada.

GENTLEMEN,—Report of special inspection, audit and examination of the books, accounts, vouchers and money of the Municipal Corporation of the Township of Charlottenburgh, in the County of Glengarry, in the hands of Walter J. Barrett, the Tax Collector for the year 1916 for that Municipal Corporation.

Upon the appointment of the Provincial Municipal Auditor, confirmed by an Order-in-Council, approved by his Honour the Lieutenant-Governor in Council, of the Province of Ontario, the 22nd day of February, 1918, Oscar Hudson, of the City of Toronto, Chartered Accountant, was instructed to make the inspection.

In pursuance of the said authority and instructions the said Oscar Hudson, Chartered Accountant, hereby reports that an inspection of the Collector's Accounts has been made.

The audit is made on the petition of the Reeve and two Councillors for 1917, addressed to the Provincial Municipal Auditor.

Scope of Audit.

The inspection and examination, under the authority of the Order-in-Council, covers the Collector's Roll and Bank Pass Books for the year 1916.

The Clerk is Geo. A. Watson, B.A.

The Collector for 1916 was Walter J. Barrett.

Collector's Roll.

The Roll is carefully prepared and classified according to School Sections.

Each Section is recapitulated, but there is not a total recapitulation at the end of the Roll, although Mr. Watson made one on a separate sheet. This should be made in the Roll and followed by the Clerk's Certificate. The Certificate has been made by the Clerk at the foot of the last section recapitulation.

The Assessments have been verified with the Assessment Roll: the Rates verified by reference to the By-law passed by the Council: the calculations and additions have been checked and found to be correct.

There were no arrears for 1915 brought forward and in explanation of this the Clerk reports that these had been cleared up by the Council and not carried forward to 1916.

Collection of Taxes.

The Council has passed a By-law authorizing those taxpayers, who wish to pay their taxes through the banks, which are the Merchants Bank at Williamstown and the Bank of Ottawa at Martintown. The Collector also collected taxes. The amounts collected by the banks are entered in the Collector's Bank Pass Book in detail as to Roll number, name, and amount of taxes and interest. Schedule A. and B. show these amounts.

These were checked off with three exceptions, in which cases, the amounts entered in the Pass Books cannot be traced to the Roll, one is in the Merchants Bank for D. Lalonde, $4.59, and the other two are in the Bank of Ottawa for King's Road Cheese Factory, $17.78, and W. J. Lane, $4.87. These have evidently been missed off the Roll and collected on last year's record, but no satisfactory explanation could be obtained either from the Clerk or Collector.

The amounts marked paid on the Roll by the Collector are shown on Schedule C. It was his custom to make deposits in lump sums as shown on Schedules D. and E., but as he did not produce any details of these deposits they were not reconciled with the collections, neither could any explanation be given by Mr. Barrett, which would assist in this particular.

Each item on Schedule C. was gone over with Mr. Barrett, and he states that he marked them paid and that he collected the money for these amounts.

The taxes not collected, and which are not marked off the Roll are shown on Schedule F., which Mr. Barrett states is correct.

The Collector issued cheques to the Treasurer on his bank account from time to time, which were deposited to the credit of the Township by the Treasurer. These were found to agree, as per Schedule G. and H.

On Schedule I., the summary shows a balance of $3,186.83 made up of amount to be collected $830.32, and amount to be accounted for by Mr. Barrett of $2,356.51. The latter amount being the difference between the total of amounts marked "paid" by the Collector and the amounts deposited by the Collector.

It may be advisable that the amounts on the uncollected list should be verified by reference to each taxpayer, as in the event of some of these having been collected

by the Collector it would further increase the above shortage. It is also the opinion of the Provincial Municipal Auditor that this should be done. Your present Council, however, do not consider this necessary and have passed a resolution, March 2nd, 1918, to this effect and instructed me to prepare a report, and not go further in the matter.

In connection with the amounts paid into the Banks, it was found that in many cases, that the amounts credited by the Banks exceeded the amount of taxes on the Roll by one dollar ($1.00). These totalled $93.00 and Mr. Barrett could give no explanation of same. It is not unlikely that in many instances $1.00 excess has also been collected by Mr. Barrett, and it was the intention to enquire into this when verifying the outstanding taxes. Your Council should, therefore, take this matter into consideration and assure themselves whether Mr. Barrett did or did not collect any excess of the amount appearing as collected by him.

In many cases interest was collected as follows: For payment after 1 January, 1 per cent.; after 1 February, 2 per cent.; after 1 March, 3 per cent.; after 1 April, 4 per cent.; and after 1 May, 5 per cent. In this connection it was impossible to ascertain if sufficient interest had been collected, as your Collector had not properly filled in the date of transmission of the Tax Notice, nor date of payment, and no By-law was found authorizing the above or any other rate of interest.

It is therefore suggested that your Council pass a By-law authorizing the interest to be charged on this year's taxes, stating a set date from which operative and a straight rate; and each year hereafter a By-law governing the then current year's interest charge.

The Bond of your Collector was examined, which is for ten thousand dollars ($10,000.00) and signed by Peter L. Bonniville and Zenophile Bonniville, and witnessed by Enslie McIntyre.

Recommendations.

It would appear that your Collector has not exercised proper care in recording the date of transmission of the tax notices on the Roll, marking the date of payment of the taxes on the Roll, nor keeping a proper record of monies collected by him and deposited in the banks.

I would recommend that in future you instruct your Collector to procure a small dating stamp, and stamp opposite each name the date of transmission of the tax notice.

In connection with the transmission of the tax notices, would recommend that your Council pass a By-law authorizing these notices to be sent out by mail on a certain date.

In marking the amounts paid, this dating stamp could also be used, which would make a much neater job and therefore easier to check.

The method of receipting, for taxes received, on the foot of the tax notice is an obsolete one and would recommend a change, by having duplicate receipts made out for each amount. These receipts should be in book form, in duplicate, numbered by the printer and controlled by your Clerk. One book at a time to be given the Collector from which he issues the receipts, keeping a duplicate of same. When a book is used up it is to be returned to the Clerk, who will check the duplicate receipts with the monies collected by the Collector.

In connection with the collection of taxes it might be well to consider the advisability of having all taxes paid into the banks, and the Collector would then only require to check the entries in the Pass Book with his roll and mark the amounts paid. He would, of course, require to follow up those who have not paid.

Your Collector should keep a proper record in detail of monies collected and the composition of his deposits.

CONCLUSION.

I wish to thank the Reeve, Clerk and Collector for their courteous treatment and assistance rendered.

Respectfully submitted.

OSCAR HUDSON,

Chartered Accountant.

Cost of this audit. $191.

TOWNSHIP OF CHARLOTTENBURGH.

RE COLLECTOR'S ROLL, 1916.

Schedule "A."

AMOUNTS PAID TO MERCHANTS BANK, WILLIAMSTOWN, ONT.

RECAPITULATION.

	Taxes	Percentage	Excess
Sheet No. 1	$3,073 08	$24 18	$9 00
" 2	3,977 26	53 59	10 00
" 3	2,697 76	26 69	20 14
" 4	1,639 59	16 57	6 00
" 5	3,702 68	38 55	14 00
" 6	2,637 73	57 39	10 00
Taxes	$17,728 10	$216 97	$69 14
Percentage	216 97		
Excess	69 14		
Total	$18,014 21		

Memo:—Reconciliation of Merchants Bank account with bank pass book.

Collections made by bank as above	$18,014 21
Entered in Pass Book:	
D. Lalonde, name not on roll	4 59
Deposited by W. J. Barrett, see Schedule D.	19,203 17
	$37,221 97
Cheques Issued:	
Total amount shown by Merchants Bank pass book	$37,221 97

Roll. No.	P.S.S. No. 1, Summerstown, Front.	Taxes	Percentage	Excess
1— 4	McGillia, Ronald	$10 33		
5	Corrier, Albert	65 20		
16	Craig, H. A.	75 67		
18	McDonald, Catharine	76 67	$0 94	
23	Baker, A. J.	87 13	.....	
	Spink, D. R.	29 81	.....	$1 00
32	Cameron, Randolph	5 59	0 10	
40	Compeau, Jas. (account, $34.40)	19 40	1 72	
42	Laplante, Frank	9 17	0 09	
43	Hope, D. W.	76 67	0 76	
45	Casgrain, Geo.	124 82		
54	McGibbon, Walter	75 67	0 75	
55	Cameron, Mrs. D. A.	69 79	.....	1 00
60	Baker, Peter B.	58 33		

Roll No.	P.S.S. No. 1, Summerstown, Front.	Taxes	Percentage	Excess
67	Masterman, Sidney	76 67		
79	Dyer, Tom	64 20	.....	1 00
2— 99	Parisam, A. L. (account, $81.26)	50 00		
102	McGibbon, David	58 33	0 59	1 00
109	Lutch, N.	58 33	2 71	
118	Craig, James R.	78 96		
133	Calquhaun, Guy C.	143 17		
137	Fralinger, C. E.	111 06		
140	Martin, Harry	4 59	0 22	
145	McGee, James	46 86	.....	1 00
150	Blanchard, Tim	1 16		
152	Derauchu, J. A.	1 16	0 02	
155	Fyo, J. B.	18 34	0 38	1 00
3—162	Grant, James	48 [illegible]		
164	Laplave, Etienne	117 80	5 85	
165	Laplave, Alin, Jr.	71 38	.....	1 00
169	Major, Z.	59 40		
170	Latreille	49 75	.....	1 00
171	Jack, Mrs. C.	74 54		
174	Handy, John	70 22		
176	Sequen, Arthur	70 22	3 55	1 00
178	Turcott, Jas.	37 77	0 37	
182	Cattanach, Donald	98 34		
184	McDonald, M. R.	59 49		
186	Abramis, W.	70 22		
187	McCulloch, Jnr.	72 38	2 16	
188	Abrams, Albert	93 01		
191	Cameron, D. A.	102 66		
209	Lauber, Peter	85 36		
211	Latreille, Chas.	37 77	1 88	
221	McLennan, D. M.	118 [illegible]		
223	Abrams, Jas.	17 30	0 17	
224	Jeneau, C. J. (account, $17.30)	9 00		
225	Abrams, J. S.	10 82		
228	McGillis, J. and A.	12 98		
229	McGillis, C.	12 98		
235	Radby, Fred.	6 49		
4—244	Lazou, Nap.	22 [illegible]	0 52	
137	Fralinger, C. E.	24 63		
265	Blanchard, W.	50 26		
155	Tyo, John B.	70 50	1 40	
		$3,073 08	$24 18	$9 00
152	Derouche, Alex. J.	69 96	1 38	
272	Fraser, Alex. D.	4 93		
275	Laplant, Frank	7 39	0 14	
150	Blanchard, T.	79 82		
5—187	McCulloch, Jnr.	27 88	0 15	
276	McCulloch, Kate	112 68	1 00	
278	McCulloch, Annie	112 50	1 13	1 00
283	McDougall, Alex.	69 54	.....	1 00
286	McDougall, D. A.	49 78	.....	1 00
288	McDonald, Jas.	57 38		
272	Fraser, Alex.	50 95	.....	1 00
292	McGillis, Alex. G.	39 80	.....	1 00
300	McDonald, John A.	131 09		
6—228	McGillis, Angus	66 09		
315	McDonald, John A., Jr.	61 68	3 05	
316	McKenzie, Mrs. D. H.	64 89	3 20	
319	Dyer, Wallace	60 48	3 00	
321	McGregor, John	60 48	1 83	1 00
322	Lapriere, Jos., Sr.	265 36	.....	1 00
339	McMartin, Maggie	122 17		
341	Benning, Jas.	145 40	7 27	
344	McDonald, Joe F.	62 68		
347	Chisholm, J. W.	91 32	4 62	

Roll No.	P.S.S. No. 1, Summerstown, Front.	Taxes	Percentage	Excess
352	McDonald, Allan P.	97 93		
355	Gains, Stephen	77 11	.....	1 09
186	Abrams, Wm.	66 09		
358	Conray, Robt.	49 47	1 48	
363	McGillis, John H.	89 12		
364	Chisholm, W. D.	62 68	.....	1 09
367	McDonald, Alex.	67 09		
223	Abrams, Jas. J.	85 92	0 86	1 00
7—372	Kaddie, R.	18 52	0 15	
374	Abrams, Stephen	68 58		
376	Lafave, Peter	18 52	0 18	
381	McDonald, Elizabeth	67 58	0 67	
386	Conliff, W. H.	76 09	0 76	
388	Lutch, Phillip (account, $163.29)	48 29	8 16	
389	Hays, Wm.	48 56		
392	McLellan, A. J.	76 09	0 76	
394	McDonald, Angus A.	42 55		
396	Grant, Angus A.	101 12		
377	Parrier, Daniel	136 16		
397	Laynachan, A. D.	71 08	3 55	
399	Spink, P. J.	76 09		
400	Grant, Libbie	51 06		
408	King, Hugh	76 09		
409	McGregor, Malcolm	76 09	1 52	
417	Grant, Donald	76 09		
419	McLellan, Mary	33 54	[illegible]	
423	Wood, Daniel	76 09	2 28	
427	McDougall, Donald J.	14 78		
432	McDonald, Alex.	46 32		
433	Kennedy, Wm.	61 07		
434	Young, Robert	68 58		
439	Grant, H. M.	60 07	3 00	
443	McColloch, Peter	78 59	3 12	
		$3,977 26	$53 59	$10 00
8/20—445	McLellan, John P.	$77 51		
452	Conray, P. A. (account, $53.83)	13 83	$2 68	
463	Grant, Donald P.	56 98	.....	$1 00
478	Marpean, Mrs. Joe	17 22	0 17	
505	Wood, Angus	30 14	0 31	1 00
9—506	Clark, Alex.	19 38		
507	McKenzie, Barbara	66 74	3 35	1 00
510	Shettah, Frank	64 59	.....	1 00
512	McDonald, A. A.	72 05		
513	McGillis, John B.	67 83	0 67	
514	McRae, Maggie	3 24		
516	Christian, Thomas	87 12	.....	1 00
517	McNeil, Peter	73 14		
518	Stewart, Donald	53 76	2 68	
520	Atkinson, Ann	18 32		
524	McKay, Donald	68 83	.....	1 00
526	Christian, Frank	69 90	.....	1 09
527	Robaitille, Adlard	60 28	.....	1 00
528	Saumier, John B.	61 28	.....	1 00
530	Lablanc, Omer	52 44	.....	1 00
531	Lager, Robert	102 19	1 03	1 00
535	Sargant, Maxine	87 12	4 35	
541	Bonniville, P. L.	6 46		
543	McPherson, Sam.	86 12	2 58	
545	Bonniville, Z.	60 28		
547	McCasham, Joe	21 53	0 42	
551	McDonald, Geo.	61 28	3 12	1 00
552	McDonald, Tom	103 34		
557	McGillis, Donald D.	4 31		
558	McDonald, W. S.	78 51		
561	Preaur, Alex.	75 36		

Roll No.	P.S.S. No. 1, Summerstown, Front.	Taxes	Percentage	Excess
564	Dingwall, Flora	15 07	0 15	
567	Manar, Chas.	54 83	.....	1 00
571	Ferguson, Flora	65 59	.....	1 00
576	Munro, F. D.	51 67	2 58	
580	Jamieson, Geo. E.	69 90		
582	Baunhamer, Mrs. Walter	31 14		
583	Baunhamer, Oral	33 39		
586	Baunhamer, Wm.	50 52		
587	Ware, Arthur	89 27		
590	McDonald, W. D.	69 90		
10—602	Heaman, Tom	85 51		
605	Ferguson, Maggie	8 56		
609	Grant, D. A.	15 89		
552	McDonald, Wm.	29 32	1 45	
610	Campbell, Duncan	1 00		
613	McDonald, John A., Sr.	48 86	.....	6 14
615	Sullivan, Jermy	11 39	0 55	
619	Fraser, Johns	48 86	0 48	
626	Dingwall, Eam	16 51		
628	Larazua, Maurice	6 12	0 12	
629	Raymand, J. N.	19 54		
631	McCrimmon, Donald	54 75		
635	Merchants Bank	9 77		
637	Dickson, D. A.	17 10		
639	Leraux, Lauis	17 10		
641	Cattanach, Mrs. James	15 89		
646	Cook, John A.	29 32		
		$2,697 76	$26 69	$20 14
647	MacPherson, Wm.	$9 77		
648	Dunlop, A. A.	21 99		
651	Robertson, Mrs. W.	13 45		
654	McIntyre, Mrs. C.	9 77	$0 45	
655	Faillon, Mrs. C.	13 22	0 13	
656	Faillon, Willie	7 33	0 25	
657	Cattanach, John	18 10		
662	Clark, Geo.	19 54		
663	Black, James	25 66	0 25	
665	Gordon, Wm.	12 22	0 60	
666	Hunt, James	7 73	0 35	
667	Green, W. H.	12 22	0 60	
668	Laraqua, Oliver	14 66		
672	Grant, Jerminia	9 77		
673	Laroique, Alex.	7 12	0 35	
676	Watson, Geo. A.	9 77		
677	Major, F.	17 10	0 17	
678	Major, Zeph.	13 45		
681	Bellemere, Donald	4 89		
682	Laracque, H.	8 33		
690	McLennan, A. J. B.	127 53		
693	Gavan, Rev. A.	22 99	0 22	
696	McGregor, Mrs. D. J.	71 85		
699	Symans, Hugh	74 29	3 70	
700	Ferguson, Jas. B.	58 63		
701	Ferguson, Geo. G.	68 40	.....	1 00
702	Ferguson, D. P.	70 85	3 55	1 00
703	Zeunville, N.	76 73	.....	1 00
706	Edgerton, Ernest	68 40	.....	1 00
708	McBain, Mrs. E.	91 39		
711	Dunn, Mrs. John	81 62		
713	Cooper, George	66 96	.....	1 00
714	McKillop, Maggie	21 99		
716	Ross, Alex.	135 37		
733	St. Lanis, Paul	3 67	0 06	
735	Latrielle, T.	74 29	1 50	1 00
738	McDonald, Sarah	11 00	0 11	

Roll. No.	P.S.S. No. 1, Summerstown, Front.	Taxes.	Percentage.	Excess.
740	Trayes, Mrs. M.	21 99		
743	Jaubert, H.	24 43	0 72	
744	Lauber, M.	6 73		
745	Maurat, Lauis	21 99		
748	McIntyre, E.	8 33	0 40	
749	Paimean, R.	9 77	0 45	
750	Bray, David	19 54		
751	Major, A.	9 77	0 45	
753	Johnson, A.	8 56		
756	Barrett, Mrs. B.	17 10	0 34	
760	Robinson, Dr. E. J.	15 89		
762	Ferguson, W. R. A.	24 43	0 72	
765	Smythe, John	14 45		
767	Jaubert, L.	6 12	0 30	
768	St. Lanis, F.	6 12	0 30	
770	St. Lanis, W.	3 67	0 18	
771	Cholette, F.	7 12	0 35	
775	Stanish, Michael	7 12	0 07	
776	Grant, May	9 77		
780	Brauan, F. (account, $14.66)	14 64		
		$1,639 59	$16 57	$6 00
786	Ward, Alex	$9 77	$0 36	
787	St. Lanis, R.	7 33	0 21	
791	Hall, A. C.	79 18	2 37	
11—822	Ross, Sandy Duncan	71 14	2 13	
837	McKillop, Donald (account, $65.47)	30 00		
807	Bray, Jas., Jr.	101 04	5 05	
845	Zuésnelle, John	27 68	.....	$1 00
849	Pafave, John	23 23	1 20	1 00
851	Lapoint, Henry	34 35	0 25	1 00
864	Major, Jas.	72 14	.....	1 00
866	McIntyre, Janet	23 23	0 72	1 00
868	McGregor, Wm. M.	74 36	.....	1 00
791	Hall, A. C.	44 46	1 32	
873	McIntyre, Nelson	2 22	0 10	
875	Landiland, Mrs. Jane	96 59		
13—688	McLennan, Mrs. C.	22 43		
1115	Souie, Alex.	62 80	1 85	
1116	McGregor, John J.	75 02		
1118	McCrimmon, Peter	144 55		
1120	Clark, Mrs. Jane	83 99		
1123	Fraser, D. A.	85 23	5 10	
1125	Tophail, McLair	72 78		
1128	Mark, Wm.	62 80		
1129	Trottier, W.	79 51		
1133	Latrielle, J.	113 15		
1138	Mitchell, Wm.	86 23		
1140	Sangster, Jas.	117 64		
1143	Sangster, R. J.	105 42		
1145	McLennan, Mrs. A. B.	95 21	.....	1 00
1152	Riches, J.	79 51	1 58	
1153	Chevier, A.	101 94	5 05	
1155	Goodfellow, Jas.	83 99		
1157	Calder, Alex.	83 99		
1159	McLennan, D. R.	83 99	2 49	
1161	McNaughton, Jas.	160 25		
1163	McCrimmon, Duncan	74 02		
14—1165	Grindley, Geo.	109 15		
1167	Fraser, D. S.	76 71	0 77	1 00
1168	McWhinnie, Wm.	98 94	.....	1 00
1173	McKay, Robert	33 45	.....	1 00
1176	Dingwall, J. J.	84 36		
1177	McGregor, A. A.	60 56		
701	Ferguson, Geo. G.	10 82		
696	McGregor, Mrs. D. J. (account, $19.47)	19 44		

Roll No.	P.S.S. No. 1, Summerstown, Front.	Taxes.	Percentage.	Excess.
1174	McGregor, Alpin	169 71		
1191	Ferguson, Rayden	61 56	.....	1 00
1192	McGregor, G. J.	56 24	2 85	1 00
1194	Beaupre, Harry	42 10	2 15	1 00
1196	Johnson, Robert	95 17		
1198	Gauthier, Jas.	100 50	3 00	
1200	McNaughton, Alex.	68 05		
1203	McNaughton, Gordon	45 35	.....	1 00
		$3,702 68	$38 55	$14 00

AMOUNTS PAID TO MERCHANTS BANK, WILLIAMSTOWN, ONT.

14—912	Christie, S. W.	$56 24		
1206	Proctor, Chas.	58 33	.....	$1 00
1208	McLaren, Donald	41 10	.....	1 00
1211	St. John, John K.	44 26	$2 25	1 00
1212	McLaren, Peter	33 45	1 65	
1219	Clark, Alpin	102 66	.....	1 00
1221	Chuse, Factory	6 49		
1237	McDougall, Donald A.	6 40	0 30	
15—1246	Bessonette, Z.	64 31	3 20	
1249	McDonald, Roderick, Sr.	13 20	0 13	
1252	McDonald, Mrs. Archie	7 61	0 14	
1253	McDonnell, Mrs. Helen	79 14		
1266	Valade, Mrs. M.	64 31	3 20	
1268	McDonald, Duncan R.	51 13	1 53	
1270	Chisholm, F. G. (account, $100.24)	60 39	5 00	
1271	Bain, Allan	69 59	3 45	
1273	Bain, Alex.	68 59	0 72	
1225	McDonald, Hugh R.	122 35	6 10	
1279	Tyo, Donald J.	80 14	4 00	
1290	McDonald, Dan B.	66 96	3 30	
1292	McDonald, Allan R.	77 51		
1295	Rinaud, Telephore	36 93	1 85	1 00
1299	Laflamme, T.	96 31		
1303	Aullae, Stephen	52 98		
16—1316	Poirier, M.	41 55	.....	1 00
1317	Zuesnell, H.	91 12	.....	1 00
1347	McDonald, Angus	32 54	0 32	
1353	McDonald, A. A.	38 30	0 90	1 00
1370	McDonald, Angus A.	6 76	0 15	
17—1628	McDonald, Angus A.	24 45	.....	1 00
1650	Kier, Tom	31 12	1 55	
1653	McDonald, Angus	67 69	3 35	
1388	Kennedy, Alex. (Rinaud)	28 90	1 40	
1404	McRae, A. D.	63 24	3 15	
18—1404	McRae, A. D.	35 26	1 75	
1444	Rinaud, P. (account, $67.09)	50 00		
22—1552	Bessonette, F.	71 49		
1558	Labelle, D.	77 26	3 85	
1564	Fraser, Alex.	136 83		
1566	Zuesnell, J. A.	79 64		
1584	Grant, Joe (account, $34.35)	33 36		
1587	Caskenette, Jas.	47 66		
1588	Caskenette, Frank	136 83		
1591	Sargant, L.	23 83	1 15	
1593	McLean, J. A.	66 38	.....	1 00
12—1622 Union.	Laraux, John	32 93		
21—1532	Ingram, R.	60 21	3 00	
		$2,637 73	$57 39	$10 00

TOWNSHIP OF CHARLOTTENBURGH, ONTARIO.

RE COLLECTOR'S ROLL, 1916.

Schedule "B."

AMOUNTS PAID TO BANK OF OTTAWA, MARTINTOWN, ONT.

Recapitulation.

	Taxes.	Percentage.	Excess.
Sheet No. 1	$3,839 29	$10 21	$14 00
" " 2	1,812 46	7 69	8 00
" " 3	3,479 51	24 29	5 00
" " 4	1,349 19	1 05	3 00
Taxes	$10,480 45	$43 24	$30 00
Percentage	43 24		
Excess	30 00		
Total	$10,553 69		

Memo:—Bank Reconciliation.

Collections made by Bank of Ottawa, as above			$10,553 69
Entries in Bank Pass Book.			
Names not on Roll—(to be traced).			
King's Road Cheese Factory		$17 78	
Lane, W. J.	$4 35		
Interest	0 52		
		4 87	
			22 65
Deposited by W. J. Barrett			287 21
			$10,863 55
Cheques issued to Treasurer on Bank of Ottawa, Schedule G.			10,850 79
			$12 76
Balance in bank, 1 January, 1918			$12 76

RE COLLECTOR'S ROLL, 1916.

Schedule "B."

AMOUNTS PAID TO BANK OF OTTAWA, MARTINTOWN.

Roll No.		Taxes.	Percentage.	Excess.
7—410	McDonald, John R.	$76 09		
418	Grant, Donald John	78 59	$0 79	
421	Wood, Catharine	73 59		
424	Wood, Alex. J.	138 67	4 15	
	Glengarry Stormont Ry.	60 07	0 60	
8/20—457	Drachie, Donald	39 75		
462	Grant, Sal.	5 31	0 31	
465	Grant, David Angus	104 34	.....	1 00
467	Grant, Donald A.	95 73	.....	1 00
473	Kyer, Patrick	76 36		
474	Turall, Christopher	40 91	.....	1 00
480	Cain, G. B.	76 36		
481	McKay, Donald	73 20	.....	1 00
491	Hall, W. D.	68 90	1 38	
494	Derauche, Alex.	47 37	.....	1 00
496	Cashian, James	54 83	0 55	1 00
498	Cashian, Wm.	130 18		
503	Tyo, William	61 28		
504	Wood, Margaret	31 14	.....	1 00
424	Wood, Alex. J.	15 07	0 45	
10—644	Urquhart, Est. W. J.	24 43	0 24	

11—802	Macgillivrays Cheese Co.	17 78		
803	McArthur, Jas.	67 69		
806	Bray, Alphonse	66 69		
808	Ross, Edmund	63 24		
810	Farlinger, Wesley	105 48	1 05	
813	Ross, A. G.	61 02		
814	Munroe, Geo.	64 47		
815	Centre, Wm.	61 02		
817	Bosicaur, Duncan	69 91		
824	McDermid, Hugh	115 60		
826	McGregor, D. J.	89 92		
828	Fyfe, James	107 70		
829	Ross, Wm.	94 37		
830	McCuaig, John P.	89 92		
831	Lafave, Francis	36 57	.....	1 00
832	McGregor, Annie	56 58	.....	1 00
839	McKillop, James	67 69	.....	1 00
841	Scott, Robert G.	94 37	.....	1 00
848	Sacia, Mrs. M.	32 12		
854	Carlyle, Thos.	44 46		
859	Bamen, Mrs. Mary	234 42		
865	Henderson, C.	24 45		
884	Williamson, J. J.	68 91	0 69	1 00
886	Williamson, Alex.	43 24	.....	1 00
12—892	Cameron, J. J.	57 50		
893	McMarton, John	92 27	.....	1 00
896	Thompson, Wm. A.	6 52		
897	McDougall, D. W.	60 84		
902	McIntosh, W. S.	55 33		
903	McIntosh, John S.	91 27		
905	Murray, B. J.	36 94		
906	McIntosh, W. J.	36 94		
907	McDermid, John D.	124 86		
909	Kinlach, Henry	127 03		
		$3,839 29	$10 21	$14 00

Re Collector's Roll, 1916.

Schedule "B."

Amounts Paid to Bank of Ottawa, Martintown, Ont.

Roll. No.		Taxes.	Percentage.	Excess.
914	McCallum, Wm.	$16 21		
915	Lafave, Jas.	59 67		
916	McIntosh, Jas. E.	54 33	$0 55	$1 00
918	McCallum, A. R.	73 88	.....	1 00
919	McCallum, Jno. P.	66 19	.....	1 00
921	Robertson, Wm.	70 54	.....	1 00
922	McLeod, John	98 79		
925	McMartin, Alex. D.	5 35		
926	McMartin, Jno. S.	53 15	.....	1 00
928	McMartin, Mrs. M. A. L.	5 45	0 32	
929	Jack, Louis	3 27	0 10	
931	Lafave, Andrew	5 45	0 49	
933	McDougall, Archie	22 73		
937	Forbes, John	17 38		
938	Campbell, Colin	9 79		
946	Urquhart, Jas.	101 06		
951	Smith, H. J.	5 45	0 55	
952	Bucksted, Joe	70 54	0 70	
954	Smith, Tom	6 52		
956	Clinfen, Albert	8 69		
957	May, James	30 42		
959	Smith, Mrs. Janet	35 87		
963	Craig, Tom	30 42	.....	1 00
966	Grant, Mrs. A.	7 62		

967	McNamara, John	34 77		
968	Decair, Jas.	21 73		
969	Laqroux, Jas.	8 69		
970	Grant, Jno. M.	82 57		
973	McDonald, Jno. A.	2 17	0 22	
977	Flaro, John	5 35	0 05	
978	Flaro, Jas.	5 35		
979	Laflave, Ben.	5 45		
982	McArthur, W. C.	39 11		
983	Creswell, D. T.	141 25	1 42	1 00
985	Creswell, C. W.	34 77		
990	McCracken, Wm.	44 46	.....	1 00
992	McFadden, Annie	44 46	0 44	
994	Lafave, Frank	4 35	0 04	
997	McGregor, Mrs. Clara	19 56		
998	Ross, Miss E.	15 21		
999	McDonald, A. A.	5 89		
1001	Clingen, Matthew	23 90		
1002	Clingen, M. J.	10 87		
1004	Laraqua, Colin	8 69		
1005	McArthur, Mrs. John	6 52		
1006	Laraqua, Oliver	10 87	0 86	
1007	Debanks, Sam	8 69		
1008	Lalonde, F.	10 87		
1011	Jacque, Hugh	4 35	0 04	
1013	Conray, Margaret	91 27		
1015	Beaudette, Jas.	14 04	1 91	
1016	Foulds, Johns	132 55		
1020	Nicholson, Mary Ann	10 87		
1021	Nicholson, Harry	6 17		
1022	McMartin, Catharine	71 71		
1025	Parran, John	7 62		
1026	McMartin, Daniel	19 56		
		$1,812 46	$7 69	$8 00
1027	McMartin, Mac.D.	71 71		
1029	Bausicaur, Robert	16 31		
1031	Ellenburgh, John	8 69		
1032	Lafave, John C.	9 79	0 39	
1035	Smith, Mrs. Geo.	15 21		
1037	Spraul, Mary J.	13 04		
1039	McPhadden, Eleanor	6 52	0 06	
1064	Massan, Louis	4 35		
1068	Fraser, Hugh	108 65		
1070	McCallum, J. J.	61 95		
1071	Rushford, Mrs. Alex.	87 92		
1072	Spraul, Jas.	72 71		
1074	Ross, D. A.	81 40		
1075	Morgan, Mrs. Edward	86 92	4 34	
1079	McArthur, Donald	95 27	0 95	
1082	White, Levi	77 06		
1085	Munroe, D. W.	159 63	1 60	
1092	Wilmot, C. H.	90 09	5 41	
1095	Ross, Bella	29 25		
1098	Grant, Duncan	66.19		
1100	Hadouceur, J. W.	7 52	0 37	
1103	Ross, Thos.	66 19	.....	1 00
1106	Irvine, Wm.	77 06		
1110	McIntosh, A. F.	109 65		
1113	Kennear, A. A.	61 84		
1114	Urquhart, A. W.	10 87		
14—1185	Cate, H. A.	118 97	.....	1 00
1224	Lazon, Louis	9 65	0 58	
16—1326	McDonald, D. A.	70 84	.....	1 00
17—1389	McRae, Alex. R.	93 24		

1397	Campbell, Duncan	114 68		
18—1429	King, Edward	6 52	0 25	
1430	Snider, John	14 22		
1436	McDonald, Geo. C.	91 32		
854	Carlyle, Thos. D.	74 90		
1443	Dupois, O.	94 73	.....	1 00
1446	O'Shea, W. P.	53 87		
1449	Benton, Chas.	78 73	4 33	
1455	McDonald, Angus	140 37		
1463	Dubean, A.	70 50	.....	1 00
1464	McDonald, Alex.	85 92		
1106	Irvine, Wm.	22 03		
1469	Fortin, E.	20 83		
19— 481	McKay, D.	2 44		
1473	McLaren, Hugh	51 30		
1476	McDermid, Hugh	70 85		
905	Murray, B. J.	73 29		
1477	Murray, W. J.	119 71		
1481	Glen Cheese Factory	12 22	0 12	
1482	Murray, Mrs. A.	48 86	3 43	
1486	Decaire, J.	57 19		
1489	Thompson, W.	56 19		
896	Thompson, W. A.	69 40		
1490	McIntosh, Alex. J.	118 26		
1492	Clark, Geo. E.	123 15	2 46	
873	McMartin, John	19 54		
		$3,479 51	$24 29	$5 00
13/21–982	McArthurs, Angus	76 71		
1499	Robertson, Hugh	184 86		
1501	McRae, Mary Ann	65 89		
1502	Munro, Wm.	87 52		
1504	McDonald, Stephen	52 91	1 05	
1505	Robertson, Alex. J.	98 34		
1511	Pelon, Paul	35 61		
1512	Robertson, Hugh A.	101 66		
1515	McDermid, W. D.	109 15		
1516	McMartin, John P.	99 50		
21—1512	Robertson, Hugh A.	32 90		
1519	McDermid, Mrs. A.	68 98	.....	1 00
1523	Campbell, John C.	77 76		
938	Campbell, Colin	74 56		
1527	Tyo, Frank	88 72	.....	1 00
1536	McDermid, Jas. R.	66 79	.....	1 00
1542	McIntosh, E.	17 54		
817	Bouriscaur, D.	9 79		
		$1,349 19	$1 05	$3 00

RE COLLECTOR'S ROLL, 1916.

Schedule "C."

AMOUNTS MARKED PAID BY TAX COLLECTOR, W. J. BARRETT.

Recapitulation.	Taxes.	Percentage.
Sheet No. 1	$2,715 88	$13 58
" 2	2,644 72	2 00
" 3	3,125 41	13 67
" 4	3,374 03	8 19
" 5	2,600 44	6 67
" 6	2,444 39	14 68
" 7	3,148 25	14 88
" 8	1,711 03	9 07
Taxes	$21,764 15	$82 74
Percentage	82 74	
Total	$21,846 89	

Roll No.	Name.	Taxes.	Percentage.
1—1	Carey Howard	$65 20	
7	Rose, Willie	4 59	
9	McDonald, Margaret	1 16	
10	Leroux, Levi	64 20	
11	Vipond, Joseph	72 08	
14	Jack, Tom	124 82	
21	Laplante, Henry	2 75	
22	Hagarty, Hiram	9 17	
25	Latreille, Nap.	13 76	
26	Amand, Geo. H.	13 76	$1 44
31	John Summers	11 47	0 55
33	Bee, Boedget	67 50	
36	Parisican, John	18 34	
39	Lafave, M.	2 29	
40	Compeau, Jas. (account $34.40)	15 00	
41	McDougal, A. L.	16 05	
49	McLaren, Harry	5 59	
50	Gueridon, Adolphus	17 21	
51	Palmer, Geo.	101 89	
53	McMaster, A. R.	80 26	
64	Lavine, Mrs. F.	4 59	
66	Doull, Dan.	9 17	
69	Russell, Joseph	67 50	
71	Chafe, E. E.	76 67	
73	McLean, A. A.	127 12	
76	McLean, Walter	58 33	
81	McGillis, Alex.	43 57	
82	Dunlop, Jos.	16 05	
83	Duquette, J. R.	57 33	
2—92	McDougall, Duncan	115 65	2 18
99	Parisian, A. L. (account $81.26)	25 00	
103	Aitkins, W. E.	76 67	
104	Rankin, Samuel	65 20	
105	Dingwall, Alex.	69 79	
107	Doherty, Thurston	78 96	3 94
110	Tyo, A. C.	78 96	
111	Ray, Walter	65 20	
112	Casgrain, Mrs. H.	27 52	
115	Gadbois, Alex.	60 62	
117	Pearson, Harry	7 88	
120	Adams, John	8 25	
123	Russell, Alex.	69 79	
124	O'Brien, W. J.	22 93	
125	Burns, Joe	12 47	
126	Craig, P. J.	150 05	
127	Purcell, Patrick	91 59	1 83
129	Purcell, Isabella	124 82	
132	Russell, Joe	62 91	
135	Cattanach, W. C.	68 79	
139	Copeland, N.	27 52	
141	Lalonde, Norman	64 20	
142	Latreille, D.	46 86	
143	Fraser, Alex.	27 38	
144	Fraser, Sandy J.	27 38	
146	Lalonde, Joseph	65 20	3 64
147	Loney, Alan J.	2 29	
148	Baker, John	2 29	
149	Derouchie, Gurdy	2 29	
		$2,715 88	$13 58

RE COLLECTOR'S ROLL, 1916.

Schedule "C."

AMOUNTS MARKED PAID BY TAX COLLECTOR, W. J. BARRETT.

2—151	Loney, Fred.	1 16	
160	Tyo, J. F.	18 34	18
3—166	DeMauns, P.	56 24	

167	Latreille, A.	57 24	76
74	Jack, Tom	23 79	
180	O'Neill, John	5 33	
129	Purcell, Mrs. I.	4 33	
195	Croll, Jas.	59 40	
196	Hallwarth, Wm.	35 61	
197	McMath, Sam	55 08	
198	McNaught, Robt.	62 73	
199	Oxley, Rev. M. S.	78 87	
202	Lalonde, Paul	59 40	
82	Dunlop, Joseph	44 26	
205	McGillis, Archie	48 59	
213	Burgean, D.	39 93	
214	Lalonde, D.	7 49	
215	Laplante, Jas.	37 77	
217	Lalonde, Joe, Jr.	22 63	
218	McLennan, Mary	124 29	
226	Clifton, Tom	2 16	
227	Mallers, Wm.	4 33	
231	Moutray, Moses	2 16	
232	Cheese Factory	15 14	75
233	Tyo, Frank	30 28	
234	Sullivan, John	6 49	24
236	Railway, Grand Trunk	62 73	
4—239	Harley, John	70 21	
240	Farlinger, J. A.	89 67	
241	Gadhoei, Alex.	51 50	
242	Richardson, Dan.	52 96	
243	Leraix, Levi	69 96	
160	Leraux, Moses	65 04	
160	Tyo, John F.	6 17	
248	Loney, Henry P.	98 52	
250	Loney, Alex. P.	52 72	
147	Loney, A. A.	111 84	
258	Wilkins, Chas.	24 63	
257	Loney, Chas. W.	60 35	
258	Loney, Sam	82 52	
259	Ramsey, Gilbert	73 67	
148	Baker, John	79 82	
149	Derauchi, G.	72 43	
263	Purcell, D.	12 32	
267	McDonald, Geo. W.	41 87	
269	Russell, John	39 19	
271	Kensilla	47 80	
151	Loney, Fred.	55 81	
272	Derauche, Henry J	7 39	7
273	McDougall, John J.	4 93	
112	Gadbois, Alex.	9 85	
5—280	McCulloch, Sara	66 04	
284	McDougall, Dan	69 54	
285	McDougall, L. A.	66 22	
273	McDougall, John J.	55 60	
291	Donald Glen Cheese Factory	9 29	
293	McDonald, Allan J.	91 60	
295	McDonald, Dan	39 49	
298	McDonald, A. A.	56 75	
305	Clive, Henry	33 52	1 65
308	Hart, John	33 52	
309	McDonald, Chas.	13 94	
6—337	McDonald, Mrs. Jno. A.	60 48	
345	McRae, D. A.	95 73	
349	McDonald, Jas. J.	108 95	
356	Warden, John	36 25	
359	Wilson, Frank	6 52	
362	Baleau, Louis	4 41	
187	Purcell, Patrick	33 05	
7—388	Lutch, Philip (account, $163.28)	115 00	
395	McDonald, Jas. R.	78 59	

398	Grant, Alexander	78 59	
413	McDonald, Archie R.	118 64	
431	McDougall, Duncan J.	53 56	
435	Irvine, James	73 59	
436	McLennan, Peter K.	71 08	
8/20—448	Grant, John A.	56 98	1 74
450	Grant, Donald A.	40 91	1 22
452	Conray, P. A. (account, $53.83)	40 00	
454	Laplante, Timothy	92 58	4 60
456	McDonald, D. B.	10 77	
458	Young, Mrs. Alex.	79 66	
460	Murray, Ann	55 98	
469	Clark, David E.	104 34	
309	McDonald, Charles D.	61 28	
475	McGee, Alfred	41 91	
476	McDonald, D. R.	21 53	
479	Cain, S. W.	65 59	
484	Clark, David J.	172 24	1 72
487	Gould, William	46 21	
488	Harley, Sam	59 13	
493	Robinson, J.	4 31	
495	Robertson, Wm.	74 20	
9—522	Derauche, James	5 93	
532	Harvey, C. L.	75 36	
534	McBean, A. G.	17 22	
544	Munroe, Malcolm	64 59	
548	McDonald, Duncan	14 01	70
550	Bonner, Daniel	46 21	1 38
554	Craig, Mrs. Wm.	63 44	
575	Ross, John	12 92	36
10—591	Robertson, F.	169 57	
594	McIntyre, A. D.	1 00	
596	Robinson, D. M.	343 02	
604	Barrett, W. J.	9 77	
608	McCallum, D.	9 77	
620	O'Shea, Tom	4 89	
652	Grant, Mrs. Angus	18 33	
661	McLennan, Murray	8 56	
670	Major, Oliver	12 22	
674	Demaulin, Mrs. T.	6 12	30
686	Corrier, Louis	2 44	
704	Lamb, Est. Wm.	4 89	
707	Pilon, F.	1 00	
734	Lauder, Ellen	90 39	
737	Munro, Edward	24 43	
741	McCrimmon, Mrs. C.	19 54	
747	McRae, Rev. A. A.	3 67	
759	Daust, Joseph	30 32	
761	Cattanach, C. A.	17 10	17
766	Grant, D. A.	7 33	
779	Fleming, Jas.	4 89	
783	St. Louis, Frank	6 12	
784	Burgess, John	63 52	
789	Major, A.	47 42	2 34
793	Bell Telephone Co.	115 56	
794	Cedar Rapids Mfg. Co.	1,026 06	
11—804	Cameron, H. A.	123 27	
809	Leraux, Jas.	61 02	
818	Spraul, John	67 69	
820	Parette, Alex.	61 02	
837	McKillop, Donald (balance, $65.47)	35 47	1 75
843	Lalonde, Francis	25 45	
846	Lafuire, Arthur	25 45	
847	Riley, Joseph	27 68	
850	Lafave, Mary Ann	20 01	
852	Dixon, Henry	25 45	
853	Kennedy, Geo.	8 89	
855	Lapointe, A.	23 23	

856	Bray, Jos.	54 35	
869	Ellis, Wm.	6 67	18
870	Scott, Rev. A. H.	63 24	
872	Ridgean, Alex.	6 67	
879	McDougall, Christie	78 81	
880	Blackwell, Kev.	159 61	1 50
12—888	King, Dan	9 79	
890	Legault, Jos.	66 19	
895	Grant, Alex.	2 61	
899	McIntosh, W. W.	43 46	
912	Christie, W. S.	77 06	
932	Munro, D. D.	23 90	
955	Clyde, Jas.	76 06	
942	McGregor, Kate	16 31	
943	Blackwood, Mrs. Ann	9 79	
955	King, Alex.	9 69	
958	Lamab, Alex.	2 17	
961	McDermid, P. D.	6 52	
972	McEwen, U.	13 04	
975	Currier, Francis	3 27	
976	McGillis, R. T.	5 45	
989	Munroe, Mrs. Janet	8 69	
850	Lafave, Mary Ann	5 45	
1040	Willing, John	19 56	
1065	Smith, Herbert	109 65	
1088	McMartin, Jas. K.	61 84	
1091	Bansuaur, Henry	29 25	
1097	Mar, Rupert	43 46	
1102	Larqua, Emma	50 98	
1108	Bansuaur, Mrs. John	4 35	
13—1120	Kier, John	45 86	2 25
1127	Clark, Jas.	72 78	
1130	McDougall, John A. (account, $86.23)	85 23	
1135	Goodfellow, Jas.	113 15	
1148	Garrett, Alfred	20 19	
1150	Cummings, Donald	142 31	
1154	St. John, Curtis	51 59	
600	McCremman, John	113 15	
14—1172	McGauchy, Duncan	70 22	
1182	McNaughton, Alex.	95 17	
1184	McIntyre, John	109 15	
1188	Russell, John (account, $102.66)	95 84	
95	McLennan, Arch.	62 73	
1210	St. John, Hugh	57 24	
1216	Cameron, C.	52 91	
1218	Levert, Elgar	78 87	
1222	Masson, A.	44 26	
1225	Munroe, Malcolm	4 33	
854	Carlyle, Thos. D.	4 33	
1227	Bergeron, Jas.	4 33	
1228	Emburgh, Jas.	6 40	
1229	McKinnon, Alex.	10 61	
1230	McDonald, Angus J.	8 53	47
1234	Chisholm, Colin	12 80	
1238	McDonald, D. D.	54 33	
15—1240	McDonald, Roderick	18 16	90
1241	McRae, D. A.	106 52	5 30
1245	Walsh, W. J.	42 21	
1247	McPherson, Roderick	69 59	
1248	McDonald, Roderick	24 75	
1250	Dupois, F.	44 85	
1251	McDonald, Mrs. A.	3 97	
1257	Campbell, D. A.	26 38	
1263	Valade Telephone	168 83	
1269	McDonald, D.	51 13	
1270	Chisholm, F. G. (balance, $100.24)	39 85	
1281	Tyo, Louis	24 75	
1284	Kennedy, John A.	15 83	

1285	Beaupre, P.	1	33	
1286	McDonald, Alex. J.	5	28	
1287	McDonald, D. J.	23	75	
1288	Beaupre, F.	22	10	
1289	McVevy, Thos.	27	38	
1293	St. Ouge, A.	40	58	
1296	Levac, Jas.	86	54	
1301	Laflame, Jos.	8	67	
1302	Laflame, Albert	8	67	
1304	St. Germain, Alex.	44	33	
1306	Quesnell, Alex.	89	75	
1307	Pairier, M.	77	98	
1308	Lafranc, F.	51	98	
1309	Liberon, E.	12	14	
1310	Andre, John	81	86	
1311	Bourgon, A.	84	76	
16—1313	Lafabonc, H.	41	55	
1314	Crevier, Oliver	20	28	
1315	Bryar, Paul	11	27	
1320	McDonald, D. J.	39	30	
1321	Manard, Jos.	57	33	
1285	Beaupre, B.	22	53	
1324	McDonald, Allan	32	54	
1286	McDonald, Alex. J.	43	81	
1330	McDonald, R. R.	91	12	
1333	McDonald, Duncan	38	30	1 90
1334	Logie, Archie	57	33	2 86
1335	McDonald, D. A.	54	07	
1337	McKeracher, D.	58	58	
1339	McDonald, Arch.	61	83	
1342	Pecord, A.	10	01	
1342	Masson, A.	39	30	
1346	McPherson, A.	95	63	95
1348	McDonald, D. J.	22	53	
1349	McDonald, J. A.	46	06	
1350	McDonald, P. J.	15	77	
1351	McDougall, Mary Ann	38	30	
1357	McDonald, John	34	80	1 00
1358	Campbell, Duncan	5	51	25
1359	McDonald, Alex. A.	22	53	
1362	McDonald, D.	4	51	
1363	Donavan, Michael	28	04	
1365	Donavan, John J.	47	19	
1367	McDonald, Donald A.	11	27	55
1368	McDonald, Allan A.	4	51	11
1369	Emberg, M.	15	77	
1371	McDonald, John J.	51	55	2 55
1372	O'Connor, Kenneth	18	27	
1374	C. P. Railway	41	61	
1233	Major, N.	2	25	
	St. John, Wm.	14	66	
17—1376	Filion, S.	118	82	
1369	Emberg, Martin	17	78	
1629	Latulippe, A. (account, $41.01)	5	00	
1631	McDonald, D.	53	35	
1632	McPhail, C.	45	46	
1634	McDonald, Alex.	54	35	
1635	McDermid, D. J.	45	46	
1636	McDonald, D. A.	79	45	
1637	Sauve, J. A.	63	24	
1638	McDonald, H. J.	84	47	96
1642	McDonald, Bella	25	45	
1644	Cameron, Hugh	45	46	1 04
1647	Kennedy, John A.	58	80	
1649	Munro, P.	38	79	1 51
1654	McRae, Donald	74	36	
1379	McRae, Donald J.	32	12	
1381	McPhee, John R.	87	70	1 00

1383	Gareau, Alex.	87 70	
1384	Shago, John A.	3 34	
1386	Munro, John D.	86 70	
1387	Smith, Duncan	57 80	
1392	O'Connor, Tom	3 61	
1393	Ross, D. J.	156 61	
1395	Ross, Donald	96 43	
1402	McDonald, John D.	38 74	
1403	Kennedy, Allen	52 30	
1227	Bergeron, Jos.	58 80	
853	Kennedy, Geo.	32 12	
18—1409	Burbouris, Wm.	58 14	10
1410	O'Connor, Duncan	54 39	
1411	O'Connor, Dan	20 83	
1412	McLennan, Alex. D.	115 80	
1403	Kennedy, Allan	34 94	
1415	Kennedy, John	47 47	
1416	Darragh, John	110 88	
1417	Ferguson, Geo.	99 26	
1419	Sloan, W. J.	15 46	
1420	Montgomery, J. W.	33 05	
1421	Montgomery, H. J.	56 08	
1422	Kennedy, John	75 90	3 79
1424	McDonald, A. A.	66 09	3 30
1428	Masson, Rush	2 20	13
1433	Corbett, C.	67 09	
1434	O'Shea, P.	60 48	
1225	Munro, M.	101 34	
1437	Avondale Cheese	16 53	
1088	McMartin, Jas. R.	17 62	
1438	Munroe, Donald	88 12	
1439	McDonald, Angus	6 61	
1444	Rinaud, Paul (balance, $67.09)	17 09	
1448	Bougie, Jos.	53 13	
1451	McDonald, Donald C.	97 93	
1458	Ferguson, Hugh	96 93	
1460	McDonald, Hugh	93 53	
1465	McDonald, Jas.	111 15	
1467	McDermid, M.	89 12	
1470	Dore, Mrs. E.	4 41	
19—479	Cain, S. W.	9 77	
1475	McCallum, John	58 63	
1487	Gouldie, Tom	55 98	
1497	McArthur, John A.	78 87	
13/21–1500	Hunt, E.	62 73	
1508	North Br. Cheese Factory	15 14	
1509	McDougall, Mrs. D. D.	97 34	4 85
21—1517	McDermid, Hugh D.	93 11	
1520	Christie, John	84 33	
1575	McDermid, P. D.	93 11	
1529	Leblanc, John	53 63	
1530	McDermid, M.	52 63	2 60
1531	McDermid, F.	36 09	
1533	McNaughton, John	36 09	
1535	Vance, Joe	42 67	
1538	Fraser, Hugh	74 56	
1540	Haggart, D. H.	35 09	
1543	McDonald, D. D.	10 97	
1544	McLaren, L.	15 35	
22—1547	Fraser, Andrew	72 49	
1548	Price, W. J.	11 92	11
1549	McDonald, W. J.	113 00	
1552	Bessonette, F. (account, $155.90)	30 00	
1554	Labelle, E.	84 41	
1559	Leraux, Alex.	70 11	
1563	Lazou, Joe	48 66	
1568	McDonald, John A.	91 55	4 57
1571	Hains, L.	2 38	

1572	McLaughlin, R.	62 96	
1574	Campbell, L.	48 66	
1576	Leraux, M.	72 49	
1577	Trottier, C.	72 49	
1578	Cheese Factory	19 06	
1579	Ross, Chas.	14 30	
1580	Olsson, Carl	14 30	
1582	Johnson, R.	90 55	4 50
1586	Martin, F.	3 58	
3—1592	Matthewson, L. A.	33 19	
1596	Collette, Peter	1 00	
1597	Cameron, Sarah	34 19	
1600	Rayside, J. S.	28 08	
1603	Carron, E.	12 77	
1534	McBean, A. G.	224 66	
1604	Watt, Alex.	149 07	
1605	Fraser, Duncan	68 93	
1606	Duff, C. A.	82 99	
16—1613	McDonald, Jas. K.	50 51	
1614	Sequin, N.	33 19	
1615	Vallaincaul, O.	22 98	
1616	Vallaincaul, H.	133 15	
1619	Ray, J. B., Sr.	59 67	
1621	Ray, J. B., Jr.	60 11	
1623	Jeanette, M.	30 48	
1624	Saanie, John	77 59	
1627	Thanette, Jas.	30 64	
10—801	C. P. R., Glengarry Ry.	85 51	

RE COLLECTOR'S ROLL, 1916.

Schedule "D."

STATEMENT OF AMOUNTS DEPOSITED IN MERCHANTS BANK, WILLIAMSTOWN, BY W. J. BARRETT.

Date.			Amount.
1916	November 4	W. J. Barrett	$140 60
	" 11	"	1,228 29
	" 14	"	115 56
	" 21	"	1,077 67
	" 25	"	546 68
	" 30	"	1,883 49
	December 7	"	263 62
	" 12	"	257 12
	" 15	"	1,205 02
	" 21	"	72 00
	" 21	"	752 69
	" 26	"	128 93
	" 30	"	1,624 12
1917	January 1	"	390 22
	" 1	"	994 70
	" 4	"	315 19
	" 8	"	1,699 04
	" 15	"	2,473 70
	" 20	"	60 00
	" 22	"	175 00
	" 31	"	596 69
	February 5	"	278 87
	" 28	"	206 31
	March 26	"	146 24
	April 27	"	30 40
	June 7	"	58 40
	" 13	"	90 00
	" 25	"	273 43
	" 25	"	7 19

	July	11	W. J. Barrett	196 73
	"	17	"	25 00
	"	19	"	89 43
	"	26	"	191 42
	"	31	"	69 39
	August	1	"	20 00
	"	8	"	38 00
	"	15	"	219 80
	"	16	"	30 00
	September	12	"	60 00
	"	24	"	55 00
	October	17	"	35 00
	November	12	"	73 30
	December	21	"	31 00
1916	"	9	"	508 93
	"	9	"	469 00
				$19,203 17

STATEMENT OF AMOUNTS DEPOSITED IN BANK OF OTTAWA, MARTINTOWN, BY W. J. BARRETT.

Schedule "E."

December 19	W. J. Barrett	$287 21

Schedule "F."

AMOUNTS NOT MARKED PAID.

Roll. No.	Name.	Taxes.
2—97	Eagles, Arthur	$69 79
99	Poreseian, A. L. (balance, $81.26)	6 26
3—224	Jenean, C. J. (balance, $17.30)	8 30
4—253	Corbett, Rev. V. G.	2 46
7—383	Johnson, James	1 00
8/20—485	Kyer, Albert	1 00
9—577	Caza, Pacific	1 00
10—624	Lyman, Ronald	1 00
664	Urquhart, K.	4 89
722	Edgerton, Wm.	97 72
742	Jobert, E. S.	20 54
315	McDonald, John A., Jr.	25 43
769	Whitford, Geo.	10 77
780	Brazeau, F. (balance, $14.66)	2
11—842	Jack, Joseph	5 45
874	Ferguson, Geo. W.	6 67
12—945	Gray, Est. John	9 79
950	Lafave, John	3 27
974	Leraux, Albert	2 17
986	Bank of Ottawa (this is paid)	28 25
988	McMartin, Est. D. M.	6 52
996	Wilsher, Robt.	3 00
1010	McDonald, John A.	4 35
1024	Lafave, Mat	4 35
1034	Haggart, Daniel	20 56
1061	Keir, D. G.	16 21
1063	Allinat, Wm.	4 35
13—1130	McDougall, John A. (balance, $86.23)	1 00
14—1173	McGregor, West. (balance, $19.47)	3
1188	Russell, John (balance, $102.66)	6 82
15—1272	Bain, Frank	68 59
1294	Rinaud, Leo	1 00
1298	Gerault, R.	4 34
16—1356	McDougall, Ronald	48 31
1359	McMillan, John A.	8 90
1236	Lagor, Joe	6 76

17—1377	Jadieu, F.	14 46
1356	McDougall, R.	2 22
1629	Latulippe, A. (balance, $41.01)	36 01
1405	Lagrue, J.	22 23
18—1407	McDonald, Duncan B.	22 76
954	Smith, Tom	3 87
1447	Allinotte, P. A.	31 84
22—1553	Bessonette, F. (balance, $155.90)	54 41
1584	Grant, Jas. (account, $34.36)	1 00
9—1610	McDonald, Barbara	52 96
361	Lapriere, Jas.	1 00
369	Egerton, Wm.	62 68
549	McDonald, John A.	14 01
		$830 32

Schedule "G."

Statement of Cheques Issued in Favour of the Treasurer, as per Collector's Bank Book.

DRAWN ON THE MERCHANTS BANK, WILLIAMSTOWN, ONTARIO.

	1916.		
4	November	$1,636 00	
7	December	5,576 00	
13	"	1,477 00	
15	"	1,789 00	
21	"	2,400 00	
26	"	1,243 00	
31	"	6,220 00	
	1917.		
8	January	$2,198 00	
15	"	4,723 00	
22	"	600 00	
25	"	600 00	
1	February	1,086 00	
5	"	520 00	
28	"	835 00	
27	March	1,100 00	
30	May	399 00	
25	June	1,400 00	
1	August	975 00	
15	"	356 67	
23	October	808 00	
21	November	360 00	
24	December	634 60	
	1918.		
31	January	285 70	
			$37,221 97

DRAWN ON THE BANK OF OTTAWA, MARTINTOWN, ONTARIO.

	1916.		
18	December	$491 00	
23	"	790 00	
	1917.		
9	January	2,455 00	
14	February	6,173 93	
29	March	500 00	
1	June	68 00	
3	August	128 00	
26	December	244 86	
			$10,850 79

Schedule "H."

STATEMENT OF AMOUNTS CREDITED IN TREASURER'S CASH BOOK, A/C 1916 TAXES.

	1916.			
13	November, W. J. Barrett	.....	$1,636 00	
7	December "	.....	5,576 00	
13	" "	.....	1,477 00	
15	" "	.....	2,280 00	
21	" "	.....	3,190 00	
27	" "	.....	1,243 00	
	1917.			
2	January "	.....	6,220 00	
6	" "	.....	4,653 00	
15	" "	.....	4,723 00	
22	" "	.....	600 00	
25	" "	.....	600 00	
1	February "	.....	1,086 00	
5	" "	.....	520 00	
5	" "	.....	6,173 93	
28	" "	.....	835 00	
27	March "	.....	1,600 00	
29	May "	.....	467 00	
26	June "	.....	1,400 00	
1	August "	.....	975 00	
1	" "	.....	128 00	
25	" "	.....	356 67	
23	October "	.....	808 00	
21	" "	.....	360 00	
24	December "	.....	879 46	
	1918.			
31	January "	.....	285 70	
				$48,072 76

Agreeing with Schedule "G."

Per cheques on:—		
Merchants Bank, Williamstown, Ont.	$37,221 97	
Bank of Ottawa, Martintown, Ont.	10,850 79	
		$48,072 76

Schedule "I."

STATEMENT SHOWING TAXES FOR 1916 "UNPAID" AND TO BE ACCOUNTED FOR BY W. J. BARRETT.

Dr.

To Taxes as per Schedule "J"		$50,803 02
" Taxes paid not on Roll as noted, Schedules "A" and "B"		27 24
" Percentage collected by Merchants Bank, Schedule "A"	$216 97	
Bank of Ottawa, Schedule "B"	43 24	
W. J. Barrett, Schedule "C"	82 74	
		342 95
" Excess amounts of $1.00 each:		
Collected by Merchants Bank, Schedule "A"	$63 00	
Collected by Bank of Ottawa, Schedule "B"	30 00	
		93 00
" Overpaid by:		
John A. McDonald, Sr., to Merchants Bank, Schedule "A"		6 14

Cr.			
Collections by:			
Merchants Bank, Schedule "A"	$18,014 21		
Item not on Roll	4 59		
			$18,018 80
Bank of Ottawa, Schedule "B"	$10,553 69		
Items not on Roll	22 65		
			10,576 34
Deposited by W. J. Barrett:			
In Merchants Bank, Schedule "D"	$19,203 17		
In Bank of Ottawa, Schedule "E"	287 21		
			19,490 38
			$48,085 52
Unpaid taxes—per list "F"			830 32
To be accounted for by W. J. Barrett			2,356 51
		$51,272 35	$51,272 35
Memo: Difference between:			
Collection per Schedule "C"			$21,846 89
And deposits per Schedules "D" and "E"			19,490 38
As shown above			$2,356 51

Schedule "J."

RECAPITULATION OF TAXES LEVIED AGAINST COLLECTIONS AND AMOUNT UNPAID.

Composition of 1916 taxes as per Tax Roll:		
County rate	$7,211 24	
Township tax	22,943 73	
Provincial war tax	2,251 02	
Red Cross tax	2,185 11	
Ditches and water courses	96 40	
River Deandite—drainage debentures	255 19	
Dog tax	520 00	
School rates—general	7,044 91	
Trustee's rate	8,129 95	
P.S. Debenture No. 14	144 42	
S.S. Debenture No. 15	21 05	
		$50,803 02
Taxes collected:		
Collected by Merchants Bank, Williamstown, Schedule "A"	$17,728 10	
Collected by Bank of Ottawa, Martintown, Schedule "B"	10,480 45	
Collected by W. J. Barrett, collector, Schedule "C"	21,764 15	
	$49,972 70	
Unpaid:		
Per list marked "F"	830 32	$50,803 02

32 Church Street,
Toronto, 3rd September, 1918.

To the Mayor and Council,
Town of Midland, Ontario.

Gentlemen,—By authority of an Order-in-Council passed upon the recommendation of J. W. Sharpe, K.C., Provincial Municipal Auditor, the undersigned has conducted an enquiry into the financial affairs of your Municipality, covering the period, 1st January, 1913 to 31st March, 1918, and the findings of such investigation are given hereunder.

Occasion for Audit.

A resolution passed at a Council Meeting held 9th May, 1918, authorized a thorough investigation of the Books and Accounts of the Municipality of Midland, save Schools and Water and Light Commission from 1st January, 1913 to 31st March, 1918, to obtain, open and write up a Ledger for that period from which various Statements may be made. That Mr. W. L. Thomas be appointed to assist the Government Auditors to be paid by the Corporation.

That it is our wish that the Government Auditors make as much use as possible of the work done by the Local Auditors to reduce the time to be spent on the investigation as much as is wise.

Town Proper Assessment Rolls.

There were no details of Summaries attached to any Roll, there being only one grand total having been made up before the Court of Revision ordered changes, these changes being made to the Summary total, sometimes in pencil and other times in ink. This is not at all correct, as a detailed summary should be made at the end of the book, showing the total revised amount of each page, and total grand Assessment, which should agree with the total shown on the Collector's Roll.

The Assessments for the years under review are as follows:—

1913	$2,119,801 00
1914	$2,247,642 00
1915	$2,245,046 00
1916	$2,344,384 00
1917	$2,423,287 00

The various alterations as ordered by the Court of Revision and the Town Council were checked up by us.

We are of the opinion that your Council should have a survey of the town before making another year's assessment, for it is apparent that certain properties are over-valued, and others under-valued.

The Assessment Roll is arranged alphabetically, and there is no doubt that it would serve all purposes much better if it were arranged in sub-divisions, and each parcel of property following concurrently, for as it is now, it is quite a task to locate a parcel of property from one year to another, owing to the fact that it may have changed hands and be listed under another name.

Dollartown Assessment Roll.

We experienced considerable difficulty in verifying this Assessment, for there does not seem to be any complete record on file as to what the Assessment should be.

There is an order of the Ontario Railway and Municipal Board dated 16th December, 1912, which has attached to it a Schedule of Property Assessment and Taxes, which apparently fixed the taxes of each parcel of property in Dollartown for ten years from 1st December, 1913. This Schedule however does not appear to be complete, and the order provides for additions, etc., which may have been left off the Schedule.

There is on file in the Office a list made in pencil of all properties, assessment and taxes supposed to be included in Dollartown. This, however, does not check up exactly with the Assessment Roll made up in 1913, or subsequent years, and we would recommend that your Council have a complete survey made of Dollartown for the purpose of ascertaining the correct assessment.

The Assessments for the years under review as per the Assessor's Roll are as follows:—

1913	$347,165 00
1914	$342,980 00
1915	$332,535 00
1916	$327,515 00
1917	$320,385 00

It was found that a number of Dollartown properties had changed hands, but contrary to the distinct order of the Board, these were retained on the Dollartown Roll at the old rates.

The Board's Order also provides that the fixed tax rate shall apply to all properties provided improvements did not exceed $200.00, and in the event of properties changing hands, the current Midland rate shall apply.

Town Proper Collector's Rolls.

The pages of the Collector's Rolls were totalled in pencil, and upon checking same, we found many errors in extentions and additions. While there were detailed summaries at the end, they were not at all correct. We made these alterations and changes and proved each Roll with the Assessment Roll, and the Tax Rate as struck by your Council. The corrected Summary of the Rolls is shown on Schedule A.

Dollartown Collector's Roll.

The same conditions prevailed in Dollartown Collector's Roll, as in the Town Proper Collector's Roll, viz:—errors in extensions and additions, and while there were detailed summaries at the end, they were not correct. We made the necessary alterations and changes proving the Roll with the Assessment Roll, but as there was no tax rate struck by your Council, we were unable to verify same. The total taxes charged are shown on Schedule B.

Sewer Frontage and Connections.

The By-Laws covering the Sewer Frontage and Connection Levies are as follows:—

By-Law 609.	Annual Levy	$1,136 86
By-Law 764	Annual Levy	102 46
By-Law 783	Annual Levy	343 99
By-Law 855	Annual Levy	665 32
By-Law 618	Annual Levy	572 66
		$2,821 29

The Assessment Register for special rates has not been well kept, and there is not a complete record of the detailed assessments for the year.

The amounts levied for the years under review were as follows:

	Sewer Frontage.	Sewer Connections.	Total.
1913	$2,367 59	$563 35	$2,930 94
1914	2,373 20	553 73	2,926 93
1915	2,373 91	562 31	2,936 22
1916	2,376 13	570 30	2,946 43
1917	2,379 99	570 40	2,950 39

The levies against each property in the present Assessment Register for special rates are included in one item and total $2,950.54, as per Schedule C attached. This you will see is $1.15 in excess of the amount levied, but owing to some of the Schedules of the By-Laws not being available it was impossible to check this.

You will observe that the total Levy $2,950.54 is $129.25 greater than the total levies called for by the By-Laws as shown above, which would indicate that you are collecting more from the ratepayers than is necessary to the extent of $129.25 per annum.

We would recommend that a new assessment register for special rates be made up, showing the corrected amounts to be levied against each property owner, and a book for this purpose is now in the office. It was apparently in operation at one time and should be revived.

Court of Revision.

We examined the Minutes of the Meeting of the Court of Revision and checked up the Assessment Revisions with the Assessment Roll.

Council Meeting Minutes.

We have examined the Minutes of the Council Meetings for the period under review, and found same well kept.

By-Laws.

There is an index of your By-Laws which we have checked up and found to be correct, but would recommend that your Council consider the advisability of consolidating the By-Laws as this no doubt would be of considerable advantage to your clerk and yourselves for purposes of reference.

Bank.

We made a complete Audit of two years of the period under review, which was found to be correct. As your Local Auditors had audited the whole period under review we did not deem it necessary to audit more than we did in this respect as requested in your resolution aforementioned.

Cash Book.—Receipts.

The Cash Book was at no time during the period under review completely balanced off, and several of the years being only totalled in pencil. Your local Auditors must have experienced great difficulty in checking same up.

There is a considerable discrepancy in the matter of cash on hand, as it was evidently the custom of your former Treasurer to carry balances over from one year to another, and we would urge that your Council make a ruling that all receipts be deposited from day to day, so that at the end of the year all monies will be deposited and no balance be brought forward.

The balances for the period under review were as follows:—

1913	Balance on hand	$49 80
1914	Over deposit	158 58
1915	Balance on hand	4 70
1916	Balance on hand	27 43
1917	Balance on hand	1,589 00
31 March, 1918	Balance on hand	1,955 89

Mr. C. E. Smith, your present Treasurer, took temporary charge on or about 14th March, 1918, from which date until about 25th April, 1918, Miss Weston, daughter of Mr. F. R. Weston, practically received all the receipts and made the deposits in the Bank.

Mr. Smith wrote up the Cash Book from 1st January to 31st March, balancing same as at the latter date, showing the above balance of $1,955.89. The receipts from 14th March to 31st March, 1918 were $207.20, and the deposits for the same period were $209.88, which would show a balance on hand as at 14th March, 1918 of $2.68. This amount deducted from $1,955.89 shows a shortage of $1,953.21 to be accounted for by your former Treasurer.

In addition to the receipts entered in the Cash Book, as having been received in 1913, we have discovered the following amounts were received, but were not entered in the Cash Book.

Hettler Lumber Co.	$30 00
Morley Chew	25 00
Freeman Lumber Co.	20 00
G. Bay Shook Mills	25 00
Chew Bros.	200 00
	$300 00

This sum is therefore chargeable to your former Treasurer.

Cash Book.—Payments.

All disbursements were made by cheque and were vouched by your local Auditors as to cancelled cheques, receipts and Council's Orders, and we have no reason to doubt that they were correctly done.

As in the case of the receipts, the Cash Book was not properly closed off in any year. Several of the years were totalled in pencil, and it was necessary for your local Auditors to make many adjustments before arriving at the correct total. It is apparent that your former Treasurer made no effort to reconcile and balance the Cash Book, which is certainly not part of the Auditors' duties, and we cannot speak too highly of the work they did in this connection.

The Cash Book is designed with printed headings as to the nature of the disbursements, but in many cases items were entered in the wrong column, and it necessitated complete change of the totals at the end of each year. The Bank balance as per Cash Book at 31st December, 1917 was $558.26, the cheques out-

standing $2,882.08, showing a Balance as per the Bank Book of $3,440.34, in three accounts in the Standard Bank, Midland, viz:—

General	$2,552 53
Savings	214 20
Regent St. School	673 61

all of which we have verified.

Included in the disbursements for the period 1st January to 31st March, 1918, is an item of $91.36 paid your former Treasurer by cheque for Election Expenses. These Election Expenses include several items, one of which is for $21.75 due the *Midland Argus*. This money was not paid over to the *Midland Argus*, and will therefore increase the amount to be accounted for by your former Treasurer to the Town.

Debentures.

We found a proper Debenture Register entered up to date, and have prepared Schedule D giving details of your Debenture debt, as at 31st March, 1918, totalling $434,775.37.

Of the total debenture debt the Water and Light Commission pays	$122,770 63
Benson & Bray	20,822 27
Special assessments amount to	34,411 71
School debentures amount to	96,638 12
General town	160,132 64
	$434,775 37

Two Debentures have been issued in 1918 as follows:—

By-Law 953	Aid to Midland Dry Dock Co.	$25,000 00
By-Law 967	Patriotic Grants	$25,000 00

Payment for these to be levied against the General Town.

Nineteen-eighteen Debenture Levies are shown on Schedule E, and amount to $40,843.38.

Ratepayers having fixed Assessments should be levied upon for School Debentures, as well as for General School Rates.

Debentures were issued in past years to cover Deficits on current account as follows:—

1905	$10,000 00
1908	8,850 00
1916	25,000 00
	$43,850 00

This gives conclusive proof of short levies for General Town Purposes, thus necessitating the issue of these Debentures.

Debentures were also issued for Bonuses as follows:—

By-Law 360	$25,000 00
410	50,000 00
518	10,000 00
	$85,000 00

Thus making a total Debenture Issue to cover Short Levies and for Bonuses of $128.850.00. The Town merely postpones the day of settlement in the case of the former, while the Asset for the Bonuses is an intangible one, and is therefore excluded from the Balance Sheets.

Tax Arrears.

There had evidently been no effort on the part of your former Treasurer to balance his Outstanding Taxes. This should be done at least twice a year, in order to enable the proper percentage additions to be added, for it is also quite evident that no systematic effort had been made to collect arrears with the proper percentage additions.

On 8th May, 1917 your Council passed a By-Law No. 960, as follows:—"The Treasurer of the Town of Midland be and is hereby empowered to impose a penalty upon all Taxes and Rates due the Corporation of Midland and remaining unpaid after the 6th day of June, 1917 of 5 per cent. in addition to the 5 per cent. provided for in By-Law No. 937 upon Taxes and Rates remaining unpaid after 21st October, 1916."

The Rolls not having been returned to the Treasurer by the Collector as set out in the Act it was illegal to add more than 5 per cent. to the arrears. Had the return been made on time the 5 per cent. imposition would have been a statutory one not requiring the sanction of Council. Schedule F attached shows the Taxes Outstanding for the years 1910-1917, inclusive.

Taxes.

Included in these Tax Arrears are quite a number of items, which apparently had been paid to your Treasurer, and he has not accounted for same. We have seen receipts for Taxes, Schedule G, totalling $210.58, which have not been recorded as having been received by your Treasurer.

Your present Treasurer, Mr. C. E. Smith claims to have seen receipts for Taxes paid to your former Treasurer, totalling $1,462.41, Schedule G, which have not been entered in the Cash Book by your former Treasurer.

There are on file in the Treasurer's Office Stubs for receipts issued for Taxes by your former Treasurer, totalling $1,717.83, Schedule G, which have not been entered in Cash Book, as having been received. This makes a total of $3,390.82, taxes apparently received by your former Treasurer and not properly accounted for by him.

The present system of receipting for Taxes at the foot of the Tax Bill, is an obsolete one, and we would recommend the use of a duplicate receipt book, the original and duplicate being numbered by the Printer. A record should then be kept of all books obtained from the printer, which should be submitted to the Auditors. All receipts should be accounted for either as a duplicate or an original cancelled as not used, receipts to be signed by ratepayer and collector.

We would call to your attention that there is a possibility that further taxes have been collected and not accounted for by your former Treasurer, and while we are aware that notices have already been sent to many ratepayers on the arrears list, we would recommend that a specially worded notice be sent to all parties on the outstanding list, who did not reply to the former notice. In fact, it might be well to consider the advisability of employing a responsible party to call on all parties to obtain the necessary information.

Ledger.

A Ledger has been opened up as at 1st January, 1913, and posted for the five years to 31st December, 1917.

This will be used each year hereafter, and will afford information for the successive Councils, and provide the means whereby the Annual Statements may be compiled.

It has been customary in the past to prepare one General Balance Sheet at the end of the year. This does not in our opinion, give you a comprehensive view of the affairs of the Corporation.

We have therefore prepared a Cash Balance Sheet, Schedule H, for each year, showing your Immediate Liabilities and Available Assets.

By reference to these Statements you will see to what extent the Town Deficit has changed yearly, viz:—

1 January, 1913, Deficit		$4,550 52			
31 December, " "		15,444 22	Increase		$10,893 70
31 " 1914 "		27,787 01	"		12,342 79
31 " 1915 "		40,794 81	"		12,807 80
31 " 1916 "		9,671 37	Decrease		30,923 44
31 " 1917 "		11,105 34	Increase		1,434 03

Decreases in Cash Deficits have been brought about. not by an increased Levy upon the Ratepayers for General Town Purposes, but by the issue of Floating Debt Debentures.

Schedule I shows your permanent Assets and obligations thereon as at 31st December for each year under review. The difference between them is the Ratepayers Investment which is as follows:—

31 December, 1913	$62,445 17
31 December, 1914	77,514 42
31 December, 1915	94,254 33
31 December, 1916	79,949 96
31 December, 1917	98,881 76

The issuance of Debentures for any purpose such as Floating Debt merely serves to postpone the day of payment and payments of Bonuses out of Debentures gives the Corporation no corresponding Asset, and thereby reduces the equity of the ratepayers. Above reduction in Ratepayers' Investment in 1916 is attributable to this cause.

Schedule J is a Comparative Statement of Cash Receipts and Expenditures for the period from 1st January, 1913 to 31st March, 1918.

Schedule K is a Comparative Statement of Income and Expenditure of General Town Funds. The results of each year's Statement shows that the successive Councils invariably failed to levy upon the ratepayers sufficient sums to cover their year's expenditures thus necessitating the issuance of Debentures. This practice is reprehensible, and your Council should endeavour to levy a sufficient amount for 1918 to cover the estimates for that year.

Bonds.

We have examined the Bond on your former Treasurer, and find it is for $5,000.00 expiring 11th July, 1918 in the Employers' Liability Corporation, Policy Number is 50448 and is dated 11th July, 1913.

By-Law No. 800, 13th February, 1912 calls for a Bond of $10,000.00 on your Treasurer. This By-Law was renewed by By-Law No. 841, 27th June, 1913. We could not find any authority for changing the amount from $10,000.00 to $5,000.00.

According to Section 222, Sub-section 3 of the Municipal Act, the Council should, each year, inquire into the sufficiency of the security given by the Treasurer, and to cause to be entered in its Minutes the result of the inquiry. This apparently has not been done.

Title Papers.

The Title papers for Town property on file in your office are shown on Schedule L.

We would recommend that your Clerk be instructed to procure deeds for all Town properties and keep same on file in his office.

Treasurer's Shortage.

Our investigations disclose a shortage in the accounts of your former Treasurer as follows:—

(1) Cash unaccounted for as at 14 March, 1918	$1,953 21
(2) Subscriptions by Midland firms for outside fire brigades, not accounted for	300 00
(3) *Midland Argus*, account drawn by treasurer but not paid over to them	21 75
(4) Taxes paid to treasurer, not entered in Town Cash Book nor marked off collector's rolls (Stubs of receipts for these are on file in clerk's office.)	1,717 83
(5) Taxes paid to treasurer, not entered in Town Cash Book nor marked off collector's roll (Receipts on file in clerk's office.)	210 58
(6) Taxes paid to treasurer not entered in Town Cash Book nor marked off collector's roll (Receipts submitted to present clerk and not retained by him.)	1,462 41
7) Penalty on tax arrears as per Council Resolution to be accounted for by treasurer	1,735 69
Total	$7,401 47

With regard to Item 7, R.S.O. 1914, Chapter 195, Section 140, Sub-section 2, provides that the Treasurer shall on the first day of May in each year add 10 per cent. to the Tax Arrears or an additional amount up to 10 per cent.

The sum of $1,735.69 included in the above shortage represents the amount of percentage lost to the Town on arrears. What portion of this sum was collected by the Treasurer and not turned in, we are unable to discover. This could only be ascertained by obtaining all Tax Receipts which were subject to the penalty. Despite yearly resolutions of Council instructing the Treasurer to collect the additional percentage, he apparently failed to do so.

The total shortage will not be known until each ratepayer apparently in arrears has acknowledged the debt or produced a receipt.

Our recommendations are summarized below, and we beg to point out that the Act provides that these shall be carried out by the Council.

1. *Assessment Rolls* should be compiled according to Streets and not alphabetically, to avoid the omission of properties on the Roll and consequent loss of revenue.

Assessors should complete the Roll by adding it up in ink page by page, and make a Summary at the back of the Roll. This summary is the one to which he makes the required Affidavit, and should only be altered under order of the Court of Revision, and these alterations are to be done in red ink by the Clerk.

2. *Collector's Rolls* are to be written up from the revised Assessment Rolls. Each Roll should agree item by item and page by page, the final Summary agreeing with the corrected one in the Assessment Roll. In spreading the rates upon the

Roll, care should be taken to avoid errors in extensions of rates and footings. Proof of these should be made page by page by multiplying the total Assessment on each page with the various rates. Fixed Assessments should be given a page to themselves. The Roll should be summarized on the last page and the Clerk's affidavit attached thereto.

3. *Sewer Frontage and Connections* Special Rate should be entered in a Special Book, distinguishing between the various Sewers.

4. *Cash Book* should be agreed with the Pass Book and be added and balanced monthly. All receipts should be deposited in the Bank intact.

5. *Debenture Requirements* should be levied for in full each year, and none of the proceeds of the Levy should be diverted to other purposes.

6. *Tax Collector* should use a duplicate book in which to enter his collections day by day, and when making his weekly return to the Treasurer should give the original list showing Roll Numbers, Names and Amounts to the Treasurer along with the money. The date when Taxes are collected should be clearly marked in the Roll in the space provided, the items not so marked representing the Taxes still uncollected. The Collector should be made to return the Roll within the period provided in the Act, or within the time extended by Council Resolution, and the latter date should not be later than 1st of February. The Collector when returning his Roll to the Treasurer is required to make an affidavit as to its correctness, and also to furnish a list of all Taxes remaining unpaid giving his reasons for not being able to collect same. The Collector shall not be a member of the Council, nor the Clerk nor Treasurer of the Municipality. F. R. Weston was acting in the illegal dual capacity of Collector and Treasurer.

7. *Tax Arrears* should be collected as promptly as possible each year. Means should be used to enforce collection by distress or sale of lands, according to the decision of the Council. In the case of your Corporation, no such means have apparently been invoked, as 1910 Arrears still appear on the Rolls.

8. *Tax Levies* should be made yearly in full of all requirements. Debenture Amounts are known. Special Rates are fixed and can readily be assessed. It remains for the Council to determine the General Rates. These should be based upon the Estimates of Council as to the expected expenditures, and the rate should be such as to provide the sum required. Council should keep itself informed throughout the year as to the relation of the expenditures to the Appropriations.

9. *Bonds* should be put upon the Collector and Treasurer and the Council should see that this is done. The bond on your former Treasurer was for $5,000.00, although the Council's resolution ordered one for $10,000.00 to be obtained.

10. *Duplicate* Official Receipt Forms should be used by the Treasurer for all monies received by him from whatever source. These should be print numbered and the payor should be required to sign as well as the Treasurer. The original would go to the customer and the copy placed on a binder numerically. In no other way can Incoming Cash be efficiently checked by the Auditors.

Conclusion.

Mr. W. L. Thomas, who was supplied by you rendered able assistance.

Your present Treasurer, Mr. C. E. Smith was most courteous and obliging in supplying all information asked for.

The Mayor, Mr. D. L. White, Jr., also rendered considerable assistance.

Yours very truly,

Oscar Hudson.

Cost of this Audit $774.

Chartered Accountant.

CORPORATION OF THE TOWN OF MIDLAND.

Summary of Rolls. Schedule "A."

1913	County Rate	$5,048 63	1914		$5,350 06
	Public Schools	22,462 65			22,499 68
	High Schools	3,903 34			4,045 20
	Debentures	21,319 00			22,589 46
	Town Rate	8,007 35			8,451 28
		$60,740 97			$62,935 68
	Sewer Frontage	2,367 59			2,373 20
	Sewer Connections	563 35			553 73
		$63,671 91			$65,862 61
1915	County Rate	$8,307 17	1916		$8,440 13
	Public Schools	23,709 49			23,210 47
	High Schools	4,288 84			5,439 18
	Debentures	22,721 66			23,163 56
	Town Rate	5,568 21			14,629 67
	War Tax	2,761 51			2,766 48
				Benson & Bray	2,063 13
		$67,356 88			$79,712 62
	Sewer Frontage	2,373 91		Sewer Frontage	2,376 13
	Sewer Connections	562 31			
				Sewer Connections	570 30
		$70,293 10			$82,659 05
1917	County Rate	$7,949 19			
	Public Schools	27,506 56			
	High Schools	6 858 35			
	Debentures	25,931 37			
	Town Rate	15,607 57			
	War Tax	2,787 20			
	Y. M. C. A	3,029 51			
		$89,669 75			
	Sewer Frontage	2,379 99			
	Sewer Connections	570 40			
		$92,620 14			

Summary of Rolls. Schedule "B."

1913	General Rate	$4,890 23	1914	$5,240 49
	Statute Labor	537 50		
		$5,427 73		
1915	General Rate	$5,000 95	1916	$4,972 91
	War Tax	536 97		531 82
		$5,537 92		$5,504 73
1917	General Rate	$4,882 22		
	War Tax	524 33		
		$5,406 55		

Subject to our report dated 3rd September, 1918.

TOWN OF MIDLAND.

Sewer Frontage and Connection Levies.

	Lot.		Frontage.	Connection.
Argus, Thomas	4	W. Midland Ave.	$3 60	$2 84
Allard, Adelia	Part 15, 16	E. Joseph	8 91	
Anderson, W. E.	6	W. Campbell	4 46	
Abel, Capt.	9	W. Manley	4 05	
Archer, Fred.	Part 6	N. Dominion	3 38	
	16	S. Toronto		
Arbor, Edmund	13	W. 4	3 44	
Arbor, Frederick	12	W. 4	3 38	
Argue, Saml.	34	W. 4	3 38	
Burke, David	Part 14, 15	E. Manley	2 91	
Bath, W. T., Ltd.	6	W. Toronto	3 38	
Bowman, Wm.	11	E. Montgomery	3 96	
Burke, Fred.	Part 6	W. Midland	1 95	1 21
Belfry, P. & T.	Part 8, 9	W. Midland	2 82	
Broderick, David	Part 19 and 20	S. Hagel	3 60	2 87
Byers, Mrs. Jno.	Part 11 and 12	E. 2nd	4 50	
Broley, Eleanor	5	N. Hogel	3 00	
Barry, Jane	N. ½ 12	E. King	2 94	4 90
Brown, R. J.	Part 12, 13	E. King	3 72	2 40
Brown, Robt.	6	E. King	3 96	2 14
Booth, J. J.	Part 18, 19	E. Midland	3 78	2 70
Baptist Church	11, 12	E. Midland	7 84	3 37
Bennett, W. H.	Part 7, 8	E. King	14 88	3 63
	4, 5, and part 3.	E. King		2 74
				3 40
Barcelo, Rev. L. A.	13, 14, 15 and 56.	S. Hogel	10 13	R. C. Church.
		E. 3rd		
Bowie, W. A.	11 and 12	W. 3rd	3 00	
			3 00	
Batt, Chas.	6	S. Dominion	3 00	
Belfry, Sherman		Victoria Ave.	3 30	
Burke, David		Victoria Ave.	4 44	
Brown, Ed.	7	Midland	3 62	1 94
Bowman, Sarah	20	H. Hogel	3 00	
Belsey, J. W.	Part 13	W. Frederick	1 98	3 20
Black, Robt.	6	H. Mary	4 92	
Bennett, W. H.	Part 5	W. Joseph	2 03	
Black, W. A.	5	E. Campbell	4 46	
Blennis, David	4	E. Campbell	4 46	
Baker, A. J.	9	E. Manley	4 05	
Burke, Mrs. E.	7	W. Manley	4 05	
Burke, E.	6	W. Manley	4 05	
Bates, Robt.	2	W. Manley	4 05	
Brown, W. C.	7	E. King	3 96	2 02
Blackmer, Louise	11	W. 4th	3 44	
Bonny, Mrs. Mary.	Part 39	H. Victoria	5 73	
Bawkes, Geo.	Part 38	S. Victoria	5 53	
Bawkes, Geo.	Part 38	S. Victoria	10 13	
Bawkes, Susan	Part 38	S. Victoria	10 13	
Burke, David	1	W. Queen	4 07	
Burke, David	2	W. Queen	4 07	
Burke, David	5	E. Queen	4 07	
Barnett, Hy.	Part 3	W. Queen	3 38	
Brighty, Geo.	Part 11	S. Elizabeth	2 70	
Burke, Robt.	Part 6	W. Midland	1 95	1 21
Bishop, W.	38 to 40	N. Hogel	....	5 41
Barnes, Jno.	Part 39, 40	E. 6th	2 50	
Bell, A. W.	3	W. 5th	3 38	
Barrie, A.	Part 7	W. King	1 62	1 34
Blythe, Ellen	13	E. Queen	3 50	
Berry, Mary	Part 7, 8	W. Montgomery	2 40	
Beardsall, Hy.	5	E. 1st	3 00	
Cave, W. G	N. part 6	E. King	1 20	2 20
Cave, W. G	17	E. King	1 92	2 60
McArthur, Abraham A.	100	W. 3rd, part 17	2 16	2 60

	Lot		Frontage.	Connection.
Craig, H. J.	7, 8	W. 3rd	9 75	3 73
Craig, H. J., Trustee Osborne Estate	11	W. King	3 00	93
Campbell, T. J.	Part 12	W. King	1 20	3 08
Campbell, T. J.	Part 12	W. King	1 20	2 42
Copeland & Son	18	W. Midland	4 08	2 32
	Part 19	W. Midland	3 24	4 70
Copeland, A. E.	17	W. Midland	3 39	2 45
Carr, Isabella	5	S. Dominion Ave.	3 00	5 18
Crawford, T. A.	4	E. 1st	3 00	
Campbell, Adam	Part 3	E. King	3 54	2 51
Clark, Chas.	10	E. King	3 96	2 99
				75
Cuff, Alex..	5	E. King	3 96	2 41
Clarkson, John	8	W. Campbell	4 46	
Cowling, D. H.	5	W. Campbell	4 46	
Church of England	1, 2, 3	E. 3rd	10 13	
Chalmers, Robt.	Part 10	W. Manley	2 23	
Clark, Andrew	8	W. Manley	4 05	
Clark, Arthur.	Part 5	W. Manley	4 05	
Chew, Thomas	3, 4	W. Manley	8 10	
Clark, Mrs. D. H.	8	E. Midland	5 28	2 14
Cooper, Jno.	10	E. Montgomery	3 96	
Carson, Wm.	Part 19	N. Toronto	11 81	
Copeland, A. E.	Part 19	N. Toronto	7 42	
Chalk, Sam	18 and 19	W. 4th	4 53	
Craighead, I. L.	31	W. 4th	3 44	
Church, Peter	32		3 38	
Carmichael, D.	17	E. 4th	3 24	
Chatten, C.	Part 39	H. Victoria	3 51	
Clegg, Richard	7	W. Queen	4 52	
Chew, Thomas	45	E. Queen	8 10	
Calhouse, Geo.	Part 11	S. Elizabeth	2 70	
Columbus, W.	12	E. Montgomery	3 96	3 33
Curry, Jacob	6	E. 1st	3 00	
Cunningham, W.	12	S. Hogel	3 00	5 19
Culverby, S. P.	6	W. 6th	3 00	
Craig, A. J.	21	H. Hogel	3 00	
Creighead, J. L.	Part 2, 3	S. Toronto	4 50	
Cowdrey, Elizabeth	2	W. Montgomery	3 96	
Copeland, A. E.	3, 4	N. Toronto	5 88	
Courtemanche, A.	Part 17, 18	E. King	1 74	1 99
Cameron, Neil	6	E. 6th	3 00	
Clegg, Jas.	Part 13	E. 2nd	3 10	
Catalino, Jos.	Part 4	E. King	1 32	
Campbell, Syl.	5	W. 6th	3 00	
Cook, Albert	16	E. Midland Ave.	3 91	1 52
Cowan, Jos.	3	W. 1st	3 00	2 03
Clerk, B. W.			13 38	
Clegg, H.	Part 8	E. Midland Ave.	1 32	3 23
Clegg, H.	Part 8	E. Midland Ave.	2 64	
Dudley, W. T.	Part 5	E. Midland Ave.	3 00	2 52
Demorest, J. W.	13	E. 3rd	6 00	2 87
Duncan, W. H.	Part 5	W. King	1 50	3 50
Dobson, Geo.	W. ½ 13	W. Frederick	1 98	1 69
Dobson, Geo.	3½, 14	W. Frederick	1 98	2 48
Duffett, A. H.	16	W. Frederick	2 40	
Duncan, Mary	4	W. King	3 00	2 39
Duncan Bros.	Part 14 and 13	W. Midland	4 35	2 26
	Part 14	W. Midland	2 46	2 05
Duncan, Thos. W.	Part 7	E. King	3 00	2 20
Dunn, Jas.	2	E. Campbell	4 46	
Dunn, Jno. L.	Part 29	N. Victoria	2 70	
Devitt, Thos.	19	E. King	3 96	2 47
Elliott, J. J.	4, 5, 6	S. Hogel	12 00	3 71
Presbyterian Church				
Egerer, Chas.		E. Queen	3 50	

	Lot.		Frontage.	Connection.
Ellison, W. J.	Part 9	E. Midland	3 44	
English, Walter	18	W. Frederick	3 96	
Edwards, Geo.	3	W. 6th	3 42	
Ellcott, Joseph	6	E. Frederick	3 96	
Ewen, Jas.	Part 4	W. Joseph	3 24	
English, Ed.	7	W. Campbell	4 46	
English, Mary	8	E. Campbell	4 46	
Elliott, Thos.	Part 12, 13	W. King	1 20	3 21
Ellery, J. H.	Part 39, 40	H. Victoria	2 70	
Fraser, Jno. Estate	Part A	W. King	7 56	2 60
Foster, W. B.	Part 5	N. Dominion Ave.	1 62	
Fusee, Chas.	17	W. Frederick	3 96	4 09
Fusee, Wm.	3	E. Frederick	3 96	
Finlayson, W.	26 to 29	S. Hogel	10 50	
	17	W. King	3 48	1 47
Fair, W. H.	6	W. Montgomery	3 96	
Froats, Myron	N. part Reserve	E. 2nd	4 05	
Foster, Elizabeth	3	W. 3rd	3 38	
Fitzgerald, Mrs. B.	Part 3	W. Campbell	3 38	
Fitzgerald, G.	Part 3, 2	W. Campbell		
	1	W. Campbell	9 99	
Feheeby, Jno.	1	E. Campbell	4 46	
Finlayson, W.	29	E. 5th	6 75	
Finlayson & Broderick	D.	W. King	1 50	
Furness, Saml.	4	E 5th	3 38	
Free Methodist Church	Part 6	W. Midland Ave.	3 60	3 35
Grand Trunk Railway		Bay Street	9 78	
		Gloucester	5 89	
Gladstone, Wm., & others.	1, 2	E. King	11 46	4 48
		Victoria Ave.	2 58	4 20
Gladstone, Frances	7	N. Mary	4 92	
Griffith, A. H.	1	W. Montgomery	3 96	
Goodfellow, Jno.	13	W. King	1 20	2 97
Graham, Geo.	7	E. Campbell	4 46	
Gill, Jno.	Part 7	E. Frederick	1 98	
Grise, Philan.		Midland Ave.	3 60	
Grand Trunk Railway		Front Street	20 25	
Grand Trunk Railway		Montreal	8 43	
Gerard, Louis	22	W. 4th	3 38	
Gray, Jas.	25	W. 4th	3 44	
Grise, Geo.	3	E. 5th	3 38	
Grant, F. W.	13, 12, 11	E. Murphy	10 13	
Subject to our Report dated 3rd September, 1918.				
Gardener, Benjamin	8	E. Queen	4 05	
Ganton, Peter	Part 8	W. Queen	4 20	1 60
Gordon, E.	C.	W. King	1 50	
Grise, Ernest	12	E. King	7 92	2 41
Grise, Didos	Part 2	E. King	1 20	
Grise, Didos	Part 9	W. Midland	2 70	2 42
Grise, Didos	Part 10		2 70	
Gravett, Mary	27	W. 4th	3 44	
Grise, Bros.	1	E. King	9 33	3 75
Hacker, Wm.	16, 17, 18	W. Russell	7 53	
Humphries, Robt.	4	N. Dominion Ave.	4 53	
Hocken, Hy.	2	W. 1st	3 00	2 74
Hood, David	Part 7, 8	E. 2nd	4 50	9 54
Hewis, Mary	18, 19	W. King	11 40	2 85
	Reserve	W. 2nd	5 53	
Hewis, Jno.			3 38	
Hanley, Jno.	10	E. King	3 96	1 50
Hinds, Mathew	Part 5	W. King	2 64	2 68
Harkley, Richard	15, 16	E. Midland	3 91	1 52
Hunter, J.	20	E. Midland	3 91	2 56
Henry, Margaret	Part 3, 4	W. Midland	4 80	3 03
Horrell, Digby	Part 1	E. Midland	3 62	79

	Lot.		Frontage.	Connection.
	Part 1		2 70	
			2 10	
			2 10	
	34 to 37	S. Hogel	18 00	
Harrell, J. B., & Son	9	W. King	....	2 79
	30 to 33	S. Hogel	15 00	4 29
	10	E. Montgomery		
Hill, Joseph	8, 9	S. Hogel	4 50	
	9	S. Hogel	3 38	
Hastings, Jas.	12	E. Queen	3 50	
Hanley, J. Bruce	Part 1	W. Queen	7 20	7 46
Hartman Bros.	Part 25, 26	S. Hogel	4 50	5 30
Hurst, Wm.	Part 3	W. Midland	1 80	
Hunter, Thos.	Part 8	E. Frederick	1 98	
High School	4 to 10	N. Dufferin	18 96	12 92
Hansford, Chas.	Part 14, 15	E. Manley	2 34	
Hoggart, J.	14, 15, 16	E. Wing	3 66	97
Hagerman, Geo.	4	W. 1st	3 00	3 46
			....	2 70
Huston, Walter	6	W. 2nd	3 38	
Hill, Frederick	9, 10	W. Joseph	8 91	
Hopwood, Chas.	6	W. Joseph	4 46	
Hamill, S. J.	Part 13	E. Joseph	2 97	
Hamlin, Albert	9, 10	E. Joseph	10 26	
House, A. E.	10	E. Queen	9 11	
Hocker, W. H.	Part 10	W. Manley	2 83	
			4 05	
Howard, C. W.	6	E. Manley	4 05	
Hartman Bros.	8	W. King	3 00	3 50
Hill, Joshua	8, 9, 10	N. Toronto	10 13	
Horn, John, Jr.	16, 17	W. 4th	2 30	
Horn, Jno., Sr.	Part 39, E. 6	N. Victoria	2 77	
	E. 5		3 38	
Horrell, J. B., & Son, Est.	9	N. Queen	4 07	
	10		4 07	
Hutchinson, Geo.	8	E. Queen	4 07	
Horrell, J. B., & Son	30	Hogel Ave.	6 75	
	6, 5, 4	W. 5th	10 13	
Hanley, J. B.	Part 3	W. Queen	1 11	
	2		4 50	
House, A. E.	9	E. Queen	4 05	
Humphreys, Wm.	Part 10	N. Elizabeth	6 34	
Hayne, Geo.	Part 11	S. Elizabeth	2 70	
Horne, Peter	2	E. 6th	3 00	
Hudson, Archie	Part 15	E. Manley	2 49	
Harden, E.	8	E. King	3 96	2 11
Hall, Joseph	7	E. Queen	4 07	
Hopkins, W.	Part 11	W. Manley	2 50	
Heard, H.	Part 37, 40	N. Victoria	2 70	
Irwin, T.	18	S. Hogel	4 50	
Irwin, Robt.	16, 17	S. Hogel	4 50	
Ingram, Alex., Estate	15	W. King	....	3 59
	1, 2, 3	N. Dominion Ave.	7 50	
	Part 12, 13	E. Joseph	2 97	
Irwin, Robt.	16	S. Hogel	3 38	
Ingram Estate	10	S. Dominion Ave.	5 79	
Ingram, Alex., Estate	10	W. Campbell	4 46	
Iles, R.	28	W. 4th	3 38	
Ingram Estate	Part 39	N. Victoria	3 38	
	6	E. Queen	4 07	
I.O.O.F.	6	W. King	3 00	3 49
Jeffery, F. W.	16	W. King	3 00	5 60
Jeffery, F. W.		E. 6th	9 00	
Johnston, Rose	Part 2	W. King	1 98	2 02
Johnston, G. E.		W. King	1 98	
Joyce, P.	Lave.	W. 2nd	1 35	

	Lot.		Frontage.	Connection.
James, B. R.	Part Reserve		4 86	
Johnston, Austin	4	W. Queen	4 50	
Jackson, George	D.E.F.	W. King	3 60	4 68
Johnston, T. J.	Part 6	W. King	3 36	3 63
Kelman, J. L.	30, 31	N. Hogel	6 00	
Kitchen, Wm.	Part 3	W. Midland	1 80	2 54
King, R. J.	Part 12	W. Frederick	1 98	
Kerr, G. A.	Part 6	N. Dominion Ave.	1 50	4 21
King, Alfred	23	E. 4th	3 44	
Kirk, Amos	Part 7	E. Frederick	1 98	
Keller, Wm.	Part 3	W. King	1 98	1 17
Keller, H.	Part 7	W. King	1 38	1 34
Kollmyer, E. E.	Part 17, 18	E. King	1 74	1 98
Keller, M. S.	A.	W. King	2 76	
Letherby, J. A.	Pt. Block A.	W. King	7 05	2 50
Little, Roland	13	W. 2nd	4 08	3 13
Levine, Michael	3	E. King	3 96	3 13
Laidlaw, A., Sr.	9	E. Frederick	3 96	
Lauraundeau, N.	Part 3	E. King	....	3 26
	Part 6	E. King	4 22	4 84
Lethbridge, Jas.	10	W. 3rd	3 00	
		N. Toronto	3 38	
Letherby, Edwin	Part Block A.	W. King	5 70	2 71
Lavery, Agnes	Part 7, 8	E. 2nd	3 00	
Laidlaw, A. J.		W. 6th	4 02	2 33
Laking, A. E.	19	W. 4th	2 23	
Loney, A.	15	W. Midland	2 40	2 34
Leithwood, Wm.	Part 19	E. Midland	2 19	2 83
Lamb, Silas	N. ½ 8	W. Queen	2 03	
Midland Hotel Co.	10	E. King	4 80	2 10
	10	W. Midland	5 76	2 79
	8	W. Midland	4 80	2 59
	10	E. King and Bay	7 20	
Morrow, J. R.	Part 6	W. King	1 62	
	5, 6	1st St.	6 00	
Morrow, Marie	5, 6	E. 2nd	3 37	3 95
McLaren, Mrs. B.		E. 2nd	3 38	
Mitchell, D.	Part 3	W. King	1 32	2 01
	1	W. 1st	3 18	
Melin, Ann J.	Part 5	E. Midland	3 00	2 28
Marshall, Wm.	4	E. Midland	4 00	
Munro, Jno.	19	N. Hogel	3 00	
Mullen, Jas.	6	N. Hogel	3 00	
Macartney, H. E.	Part 6	E. King	....	15
	22, 23, 24	N. Hogel	....	4 01
	6	Dominion Ave.	12 38	
Macdonald, F. C.	3	Midland	3 96	4 05
			....	2 64
Methodist Church	Part 1, 2, 3	W. King	8 88	1 26
Melia, Albert E.	Part 14	W. Frederick	1 98	2 49
Macartney, H. E.	9	N. Campbell	4 46	
Melville, Chas.	10	E. Manley	4 05	
Millikin, J. J.	5	E. Manley	4 05	
Morgan, Thos.	4	W. King	3 96	2 61
Mikle, Elizabeth	20	W. 4th		
	14	W. 4th		
Mohan, Wm.	Part 39	N. Victoria	2 84	
Manico, Wm.	5	W. Queen	4 07	
Moses, A.	6	E. 5th	3 38	
Midland Eng. Works		N. Gloster	9 82	
Midland Wood Products	24	Montreal	6 75	
	29, 30, 31	E. 4th	10 14	
	32 to 37	E. 4th	20 38	
	38		3 38	
Mackie, F. R.	16, 17	W. Midland	4 44	2 56
McMartey, S. F. L.	7, 8	E. King	2 94	2 41

	Lot		Frontage.	Connection.
	9	E. King	3 00	2 73
	14	E. Montgomery	3 96	
McCorvie, Neil	Part 1	W. Queen	5 22	
		E. 1st	1 98	
McDonald, Dant.	15	W. Manley	6 72	
McWates, Jno.	Part 6	E. King	2 76	
McDowell, Jno. S.	6	E. Midland	3 62	2 73
McKenva, R. H.	2	E. Midland	4 00	2 73
McMullen, J. C.	5	W. Montgomery	4 68	
McGregor, Jas.	3 and 4	E. King	4 38	2 24
McDowell, J. S.	24	S. Hogel	3 00	
McLean, D.	Part 7 and 8	E. 2nd	4 50	
McCrachen, Robt.	11	E. King	3 96	5 99
McLeod, Christina		W. King	3 00	2 90
	Part A.		2 40	3 34
McDonald, Jno.	S.	E. Frederick	7 92	
McConnell, Jno.	11	W. Frederick	3 96	
	Part 12	N. Frederick	1 98	
McKinley, Wm.	Part 18	E. Midland	1 96	2 50
McDonald, J. Colin	1	W. Midland	3 96	2 83
McDonald, Herma	2	W. Midland	3 96	3 97
McGill, Geo.	5	W. Midland	3 90	2 72
McDowill, Jos.	5	W. Midland	3 60	2 83
McGill, H. R.	Part 2	W. Midland	3 60	2 72
			3 50	2 82
	Part 1, 2	W. Midland	2 64	6 81
McElroy, J.	38	S. Hogel	12 00	
McLaughlin, Jas.	Part 3, 4	E. 2nd.	4 73	
McClincly, Thos.	6	E. Joseph	6 75	
McKellin, D.	14	E. Joseph	4 46	
McHoull, W. D.	Part 12	E. Joseph	3 11	
McNeill, N.	6	W. 3rd	3 38	
McGee, Jas.	8	E. Manley	4 05	
McArthur, A.	9	W. 3rd	3 00	
McDowell, J. S.	Part 1	E. Midland	2 70	
McClung, Maud	W. part 10	E. Midland	3 96	
McMahon, Margaret	16, 17	W. 4th	2 30	
McAllister, D. E.	21	W. 4th	3 38	
McCorvie, Neil	23, 24	W. 4th	6 76	
	26	W. 4th	3 38	
McMuntry, J. C.	30	W. 4th	3 38	
McDowell, Thos., Estate	6	W. Lucen	4 07	
McPherson, Helina	7	W. Lucen	4 07	
McClinchy, Wm.	10	E. Lucen	4 07	
McKeand, D. L.	2	E. 5th	3 38	
McClinchy, Wm.	10	N. Elizabeth	5 06	
McKnight, Wm.	11	S. Elizabeth	9 45	
	Part 11	S. Elizabeth	1 22	
McMurty, J. C.	16	S. Toronto	3 57	
	5	E. King	3 96	2 29
McGunnis, P.	5	E. 5th	3 37	
McMurty, J. O.	36, 37	W. 4th	6 75	
McChristie, J.	Part 15	W. King	2 40	2 20
McLaughlin, R.	1	W. 5th	2 70	
	Part 10	W. Murphy	2 03	
McLean, Jno.	Part 3	W. King	1 98	1 18
Noland, A.	6	E. Midland	4 00	2 39
Nickerson, W.	Part 8	W. Queen	4 38	
Nickerson, Chas.	14	E. Midland	3 91	3 03
Nickerson, Albert	10	W. King	3 00	3 13
Nickerson, Chas.	18	W. 2nd	3 71	
Nicholls, Edward	9	E. Queen	4 07	
Neg, R. W.	Part 1		1 50	
Newburn, Wesley	Part 6	N. Dom. Ave.	1 50	4 20
Ottare, M., & Sons	20	W. Midland	3 96	
	7, 8	S. Hogel	4 50	3 86

	Lot.		Frontage.	Connection.
	.....	Victoria Ave.	1 98	2 51
O'Connor, Mary	Part 7	W. Midland	3 60	2 26
O'Shea, Frank	Part 5	N. Dominion Ave.	1 38	
O'Shea, James	4	E. 3rd	3 38	
Offord, Wm.	Part 16	W. 4th	2 23	
Ormsby, Wm.	29	W. 4th	3 38	
Orange Lodge	Part 13	E. 2nd	3 11	
Parkhill, Ida	27, 28, 29	N. Hogel	9 00	
Potria, Elizabeth	32 to 37	N. Hogel	18 00	
Pratt, D. S.	.....	Queen	9 82	
	A 1	Toronto	5 16	
	1, 2, 3, 4, 5	Bay Street	....	3 26
	.....	Bay Street	12 60	
Pigott, E. H.	Part 11	E. King	3 36	2 75
Playfair, Preston Co.	Part A	E. King	7 74	10 96
	.....	Bay Street	6 12	
Preston, W. E.	Part A Tay	W. King	6 12	8 33
Pearson, D. E.	Part 1 and 2	W. 6th	3 60	
Phillips, Joseph	4	E. King	2 64	
	Part 8, 9	E. King	2 97	2 92
Piggott, W. J.	Part 13, 14	E. King	3 96	2 02
Public School	9 to 12	W. 2nd, S. Dominion Ave.,		
	.....	E. 3rd, E. 3rd St.	24 84	
Playfair, Jos.	.....	Gloster	10 22	
Public School	1, 2, 3, 4	E. Manley	16 20	
Peters, Mr. Wm.	3 to 5	W. 4th	3 38	
Potria, Elizabeth	18, 19, 20, 21 ...	E. 4th	13 50	
	22	.....	3 38	
Public School	Part 38	S. Victoria	6 75	
Potria, F.	1	E. Lucen	4 07	
	2, 3	E. Lucen	8 13	
Pratt, Jno.	3	.....	4 05	
Pratt, D. S.	6, 7	N. Bay	3 27	12 56
Panton, Harry	10	E. Murphy	3 38	
Public Library	Part 3	E. 1st	5 40	
Parker, Ida	3	E. Campbell.....	4 46	
Pratt, D. S.	10	E. 6th	5 40	
Piethe, Joseph	Part 39	N. Victoria	5 94	
Pratt, D. S.	Part 10	W. 5th	1 35	
	9	W. Murphy	3 38	
	9	E. Dufferin	3 00	
Playfair, Norman	A.	W. King	5 64	7 22
Rogers, W.	Part 9	E. King	1 14	2 74
	9	W. Midland	3 60	
Rivet, J.	11	Gloster	6 20	
Rodger, Sewin.	Wedge A.	S. Victoria Ave.	3 96	3 60
Rich, Emma	8	Bay Street	1 92	
Roebuck, Benjamin	Part 1, 2	E. Frederick	5 94	2 75
Raikes, Richard	1	E. Midland	6 00	
	5	.....	3 62	2 64
	.....	Victoria Ave	1 80	
	.....	Toronto	3 16	
Ruby, H. S.	3 and part 2 ...	E. Midland	5 43	2 51
Ruby, A. W.	4	E. Midland	3 62	5 17
	Part 2	E. Midland	1 80	
Ritchie, Harry	8	E. Midland	3 80	2 40
Robitaille, A.	10	W. 4th	3 38	
Ritchie, David	38	W. 4th	3 44	
	Part 38	S. Victoria	2 36	
Ruby, A. W.	3, 4	.....	8 14	
Roebuck, Andrew	10	E. Frederick	3 96	
Ramsden, G. A.	20	W. Frederick	3 96	
Reynolds, Jos.	1	E. 1st	3 18	2 40
Rivet, Jos. D.	Part 6	W. Queen	2 23	
Rowley, W.	Part 19	W. Frederick	1 98	
Rankin, Jno.	Part 7, 8	W. Joseph	2 02	

	Lot		Frontage.	Connection.
Rivet, Philbt.	11	E. Frederick	2 36	
Richardson, N.	S. ½ 8	W. Queen	2 04	
Switzer, Annie	B.	W. King	1 98	2 84
	20, 21	S. Hogel	5 40	
		B. Toronto	2 01	
Stafford, Jas. A.	Part 8, 9	E. King	3 78	3 04
Smith, G. H.	Part 8	E. Midland	2 58	
Sutherland, J. W.	15	E. Queen	3 50 6 72	
Stephens, W. J.	Part 1, 2	W. Midland	2 64	2 76
Shakelton, Albt.	Part 15	E. Manley	2 49	
Stewart, David	Part 16	E. Manley	7 53	
Simpson, Jno. & Jas.	Part 22, 23	S. Hogel	6 00	
Soden, Jno.	7, 8	W. Montgomery	7 23	
Spoones, W. R.	7, 5	W. 2nd	3 38	
Sturgeon, Jos.	Part 8	E. Frederick	1 98	
Stephens, Richard	11	W. Midland	3 96	2 65
Smith, Chas. E.	Part 9	E. Montgomery	3 24	
Salvation Army	Part 6	E. 2nd	2 40	
Sebbald, J. A.	Part 5	W. Joseph	2 43	
Stewart, Geo.	6	E. Campbell	4 46	
Sargeant, Henry	Part 1, 2	E. Frederick	6 12	
	Part 5	W. King	1 50	
Spier, Jno.	8	W. Midland Ave.	2 64	2 83
Smith, Geo.	16	E. 4th	6 88	
Sargeant Co.		Montreal	6 75	
	14, 13, 12, 11	E. 4th	13 63	
	10	E. 4th	3 38	
Shaw, Jno. S.	28		3 38	
Sharp, Jno., Sr.	Part 39	N. Victoria	2 70	
Sharp, Thos.	7	E. Queen	4 05	
Smith, G. N.	6	E. Queen	4 05	
Simpson, Jos.	Part 10	N. Elizabeth	3 03	
Syer, Jos.	25, 26	N. Hogel	6 00	3 45
Steer, Jno.	S. 16 ft. 16	W. Frederick	2 64	
Smith, Jno.	N. 18, 15			
	15	W. 4th	3 38	
Steggles, W. J.	9	E. King	3 96	2 20
Shanacy, Harry	4	E. Queen	4 07	
Smith, R. E.	S. part 15	W. Frederick	2 88	3 55
Symington, E.	2	E. 1st	3 00	
Tummais, Thos., Mrs.	7	E. Midland	4 00	3 06
Terry, T. W.	16	W. Manley	7 53	
Taylor, Geo.	Part 7, 8	E. 3rd	6 00	3 06
Tyndall, Jas.	Part 1, 2	W. Midland	1 86	2 76
Toole, Jno.	3, 4	W. Montgomery	5 46	
Thornton, Wm.	Part 5, 6	W. King	1 98	2 83
Toole, Wm.	Part 4	W. Midland	3 00	
Tuer, Frederick	7	W. Midland	3 90	2 53
Tully, E. B.	4	W. 2nd	4 73	
Thornton, W. J.	Part 4	W. Campbell	2 23	
Thompson, Hugh	11	W. Manley	9 11	
Tench, Hy.	7	E. Manley	4 05	
Toole, Isabella	Part 7 and 8	W. Joseph	4 19	
Tremeer, C. M.	Part 8, 9	E. 2nd	3 38	
Trill, Harry T.	13	E. Montgomery	3 96	
Tribble, Richard	Part 6	W. Queen	2 20	
Town Jail	5	W. Queen	6 75	
Toole, Norman	Part 4	W. Montgomery	2 03	
Tully, M. E.	7	W. 2nd	6 00	
Taylor, J. J. H.	18	E. King	3 00	2 67
Toole, Evelyn	Part 8	W. Joseph	2 70	
Vyvyan, Saml.	13	E. Midland	3 93	3 37
Vincent, Geo.	12	W. Midland	3 96	
Wallace, J. M.	10, 11	S. Hogel	6 00	5 62
Walters, Chas. G.	Part 3	E. 1st	3 38	

	Lot		Frontage.	Connection.
	.....	.....	1 56	
Wilson & Humphries	Part 4	S. Toronto	4 50	
Walters, Arthur	Part 3	E. 1st	1 44	
Wilson, Adelaide	Part 13	W. King	1 20	2 80
Webber, Robt.	15, 16	E. Montgomery	7 92	2 33
Wagg, N. K.	8	W. King	3 36	2 68
White, Wm.	Part 14, 15	E. King	3 24	97
White, D. L.	1	E. Queen	6 00	8 10
Wallbridge, F. G.	3	S. Hogel	6 00	1 11
White, Lilian	1, 2	W. 3rd	6 75	
Wilkinson, Geo.	Part 4	W. Campbell	2 23	
Wallace, J. M.	Part 7	N. Toronto	3 38	
Wilson & Humphries	Part 5	S. Toronto	3 38	
Wilson, W. H.	Port 6	S. Toronto	3 38	
Wilson, Robt.	Part 33.....	W. 4th	3 38	
Wallace, J. M.	24, 25, 26	E. 4th	10 13	
Wadge, Saml.	27	E. 4th	3 44	
Wicks, Fred.	Part 39	N. Victoria	5 06	
White, Jno.	2	W. 5th	3 38	
White, R. F.	1	E. 5th	4 05	
Weston, F. R. & M. E.....	7, 8, part 6	W. Murphy	8 10	
	48	E. Dufferin	12 60	
White, D. L.	2	E. Queen	4 05	
	1	E. Queen	2 36	
Weeks, Harold	Part 19	W. Frederick	1 98	
Wallace, J. M.	11	N. Toronto	95	
	.....	.....	10 80	
Williams, W. H.	Part 13	N. 2nd	3 00	
Yates, Jno.	Part 2, 3	S. Toronto	4 50	
Young, R. J.	17	E. Midland	3 91	3 13
Yager, Ames	7	W. King	3 96	2 88
				2 50
			$2,379 44	$571 10
			$571 10	
			$2,950 54	

TOWN OF MIDLAND—Schedule D.

DEBENTURE DEBT AS AT 31ST DECEMBER, 1917.

By-law No.	Purpose.	Total.	Water and Light Comm.	Schools.	Special Assessment.	General.
		$ c.	$ c.	$ c.	$ c.	$ c.
320..	.....	Sold in 1918				
360..	Elevator Bonus	12,557 68	.....	.....	.....	12,557 68
446..	Public Schools	2,306 28	.....	2,306 28	.....	.....
410..	Smelter Bonus	37,531 08	.....	.....	.....	37,531 08
908..	Public School	38,865 19	.....	38,865 19	.....	.....
918 929	Water Works Extensions	12,820 65	12,820 65	.....	.....	.....
851 864	Water and Light Extensions	14,026 98	14,026 98	.....	.....	.....
812..	Benson and Bray	20,822 27	.....	.....	.....	20,822 27
855..	Sewers	13,659 67	.....	.....	9,106 46	4,553 21
871..	.....	Sold				
877..	Public Library	644 22	.....	.....	.....	644 22
919..	Floating Debt	24,283 02	.....	.....	.....	24,283 02
791..	Permanent Sidewalks	7,334 66	.....	.....	.....	7,334 66
787..	Water and Light Extensions	5,834 54	5,834 54	.....	.....	.....
772..	Electric Light Extensions	10,325 81	10,325 81	.....	.....	.....
764..	Sewers	1,825 52	.....	.....	1,217 01	608 51
713..	Permanent Walks	8,534 55	.....	.....	.....	8,534 55
690..	Public Schools	3,075 87	.....	3,075 87	.....	.....
783..	Sewers	6,142 16	.....	.....	4,606 62	1,535 54
752..	Public Schools	18,401 03	.....	18,401 03	.....	.....
753..	Public Schools	1,281 41	.....	1,281 41	.....	.....
718..	Water and Light Extensions	6,422 10	6,422 10	.....	.....	.....
662..	Public Schools	21,888 48	.....	21,888 48	.....	.....
a 567..	Sewers	10,076 11	.....	.....	.....	10,976 11
670..	Bank Overdraft	5,898 77	.....	.....	.....	5,898 77
479..	Water Works	46,219 81	46,219 81	.....	.....	.....
518..	Harbour Dock	6,429 84	.....	.....	.....	6,429 84
532..	Plant	13,793 47	13,793 47	.....	.....	.....
517..	Water Works Extension	6,429 84	6,429 84	.....	.....	.....
b 567..	Sewers	5,133 13	.....	.....	.....	5,133 13
548..	Plant	5,417 37	5,417 37	.....	.....	.....
589..	Bank Overdraft	7,465 21	.....	.....	.....	7,465 21
573..	High Schools	7,087 23	.....	7,087 23	.....	.....
602..	High Schools	3,732 63	.....	3,732 63	.....	.....
c 567..	Sewers	4,353 45	.....	.....	.....	4,353 45
619..	Permanent Walks	23,193 66	.....	.....	.....	23,193 66
609..	Sewers	17,907 43	.....	.....	17,907 43	.....
669..	Improvements	1,480 06	1,480 06	.....	.....	.....
618..	Sewers	1,574 19	.....	.....	1,574 19	.....
626..	.....	Sold				
584..	.....	Sold				
953..	.....	Sold in 1918				
967..	.....	Sold in 1918				
		434,775 37	122,770 63	96,638 12	34,411 71	180,954 91

Water and Light Commission	$122,770 63
Schools	96,638 12
Special Assessment	34,411 71
General Town	180,954 91
	$434,775 37

Subject to our Report dated 3rd September, 1918.

TOWN OF MIDLAND.

DEBENTURES, 1 JANUARY, 1913, TO 31 DECEMBER, 1917.

320. Issued 2 September, 1895. 20 Years. For Fire Hall. Annual Sum, $320.97.

Paid to 1 January, 1913.		Principal.	Interest.
Next payment, 2 September,	1913.	$277 27	$43 70
Interest rate,	1914.	291 13	29 84
5% per annum,	1915.	305 69	15 28
		$874 09	$88 82

360. Issued, 31 May, 1897. 30 Years. For Elevators Bonus. Annual Sum, $1,626.28.

Paid to 1 January, 1913.		Principal.	Interest.
20 December,	1913.	$782 28	$844 00
	1914.	821 39	804 89
	1915.	862 45	763 83
	1916.	905 57	720 71
	1917.	950 85	675 43
		$4,322 54	$3,808 86
Interest rate, 5% per annum,	1918.	998 39	627 89
	1919.	1,048 31	577 97
	1920.	1,100 73	525 55
	1921.	1,155 77	470 51
	1922.	1,213 55	412 73
	1923.	1,274 23	352 05
	1924.	1,337 94	288 34
	1925.	1,404 84	221 44
	1926.	1,475 08	151 20
	1927.	1,548 84	77 44
		$16,880 22	$7,513 98

No. 446. Paid to 1 January, 1913. Years. Principal. Interest.

Next payment, 20 December,	1913.	$113 53	$146 68
Term, 30 years,	1914.	120 11	140 10
Interest, 5% per annum.	1915.	125 17	135 04
	1916.	131 43	128 78
	1917.	138 00	122 21
		$628 24	$672 81
Purpose, Public Schools.	1918.	144 89	115 32
Issued 9 April, 1900.	1919.	152 14	108 07
Annual sum, $260.21.	1920.	159 74	100 47
	1921.	167 73	92 48
	1922.	176 12	84 09
	1923.	184 92	75 29
	1924.	194 17	66 04
	1925.	203 88	56 33
	1926.	214 07	46 14
	1927.	224 78	35 43
	1928.	236 02	24 19
	1929.	247 82	12.39
		$2,934 52	$1,489 05

No. 410. Issued 18 March, 1899. 40 years. For Smelter Bonus. Annual sum $2,526.17.

Paid to 1 January, 1913.		Principal.	Interest.
Next payment, 31 December,	1912.	$810 01	$1,716 16
Interest rate,	1913.	842 42	1,683 75
4% per annum.	1914.	876 11	1,650 06
	1915.	911 16	1,615 00
	1916.	947 60	1,578 57
	1917.	985 51	1,540 66
		$5,372 81	$9,784 20

	Year.	Principal.	Interest.
	1918.	1,024 93	1,501 24
	1919.	1,065 92	1,460 25
	1920.	1,108 56	1,417 61
	1921.	1,153 10	1,373 07
	1922.	1,199 03	1,327 14
	1923.	1,246 99	1,279 18
	1924.	1,296 87	1,229 30
	1925.	1,348 74	1,177 43
	1926.	1,402 69	1,123 48
	1927.	1,458 80	1,067 37
	1928.	1,517 15	1,009 02
	1929.	1,577 84	948 33
	1930.	1,640 95	885 22
	1931.	1,706 59	819 58
	1932.	1,774 85	751 32
	1933.	1,845 85	680 32
	1934.	1,919 68	606 49
	1935.	1,996 47	529 70
	1936.	2,076 33	449 84
	1937.	2,159 38	366 79
	1938.	2,245 76	280 41
	1939.	2,335 59	190 58
	1940.	2,429 01	97 16
		$42,903 89	$30,355 03
Next payment,	1916.	$552 22	$2,200 00
	1917.	582 59	2,169 63
		$1,134 81	$4,369 63
Number 908.	1918.	614 63	2,137 59
Term, 30 years.	1919.	648 43	2,103 79
Interest, 5½% per annum.	1920.	684 10	2,068 12
Purpose, Regent Street Public School.	1921.	721 72	2,030 50
Issued July, 1915.	1922.	761 42	1,990 80
Annual sum, $2,752.22.	1923.	803 30	1,948 92
	1924.	847 48	1,904 74
	1925.	894 09	1,858 13
	1926.	943 26	1,808 96
	1927.	995 14	1,757 08
	1928.	1,049 88	1,702 34
	1929.	1,107 62	1,644 60
	1930.	1,168 54	1,583 68
	1931.	1,232 81	1,519 41
	1932.	1,300 61	1,451 61
	1933.	1,372 15	1,380 07
	1934.	1,447 61	1,304 61
	1935.	1,527 23	1,224 99
	1936.	1,611 23	1,140 99
	1937.	1,699 85	1,052 37
	1938.	1,793 34	958 88
	1939.	1,891 97	860 25
	1940.	1,996 03	756 19
	1941.	2,105 81	646 41
	1942.	2,221 63	530 59
	1943.	2,343 83	408 39
	1944.	2,472 74	279 48
	1945.	2,608 74	143 48
		$40,000 00	$42,566 60
Next payment,	1917.	$179 79	$715 04
Numbers 918 and 929	1918.	189 34	705 15
Term, 30 years.	1919.	199 75	694 74
Interest, 5½% per annum.	1920.	210 74	683 75
Purpose, water extension.	1921.	222 35	672 16
Issued 8 March, 1916.	1922.	234 56	659 93
Annual sum, $894.49.	1923.	247 46	647 03

	Year.	Principal.	Interest.
	1924.	261 07	633 42
	1925.	275 43	619 06
	1926.	290 58	603 91
	1927.	306 56	587 93
	1928.	323 42	571 07
	1929.	341 21	553 28
	1930.	359 98	534 51
	1931.	379 77	514 71
	1932.	400 66	493 82
	1933.	422 70	471 78
	1934.	445 95	448 53
	1935.	470 47	424 02
	1936.	496 34	398 13
	1937.	523 65	370 83
	1938.	552 44	342 03
	1939.	582 83	311 65
	1940.	614 88	279 60
	1941.	648 72	245 78
	1942.	684 30	210 10
	1943.	722 54	172 46
	1944.	761 65	132 72
	1945.	803 55	90 83
	1946.	847 75	46 63
		$13,000 44	$13,834 60
Next payment,	1914.	$225 75	$625 04
	1915.	237 04	738 72
Numbers 851 and 864.	1915.	237 04	738 72
Term, 30 years.	1916.	248 89	726 87
Interest, 5% per annum.			
Purpose, Water and Light Extensions.		$973 01	$2,805 07
Issued 15 February, 1913.	1918.	274 39	701 37
Annual sum, $975.56.	1919.	288 10	687 66
	1920.	302 50	673 26
	1921.	317 62	658 14
	1922.	333 50	642 26
	1923.	350 23	625 53
	1924.	367 74	608 02
	1925.	386 12	589 64
	1926.	405 42	570 34
	1927.	425 69	550 07
	1928.	446 97	578 29
	1929.	469 31	506 45
	1930.	492 77	482 99
	1931.	516 40	459 36
	1932.	542 22	533 54
	1933.	570 51	405 25
	1934.	599 03	376 73
	1935.	628 98	346 78
	1936.	660 42	315 34
	1937.	693 44	282 32
	1938.	728 11	247 65
	1939.	764 51	211 25
	1940.	802 73	173 03
	1941.	842 86	132 90
	1942.	888 16	87 60
	1943.	929 25	46 51
		$14,999 99	$14,297 35
Next payment,	1913.	$756 06	$1,250 00
Number 812.	1914.	793 87	1,212 19
Term, 20 years.	1915.	833 56	1,172 50
Interest, 5% per annum.	1916.	875 24	1,130 82
Purpose, Loan to Benson & Bray.	1917.	919 00	1,087 06
Issued September, 1912.			
Annual sum, $2,006.		$4,177 73	$5,852 57

	Year.	Principal.	Interest.
	1918.	964 95	1,041 11
	1919.	1,013 21	992 85
	1920.	1,063 86	942 20
	1921.	1,117 05	889 01
	1922.	1,172 90	833 16
	1923.	1,231 55	774 51
	1924.	1,293 14	712 92
	1925.	1,357 78	648 28
	1926.	1,425 67	580 39
	1927.	1,496 95	509 11
	1928.	1,571 90	434 26
	1929.	1,650 40	355 66
	1930.	1,732 91	273 15
	1931.	1,819 56	186 50
	1932.	1,910 54	95 52
		$25,000 00	$15,121 20

Number 855. Next payment, 1914.
Term, 30 years.
Interest, 5½% per annum.
Purpose, Sewer Extensions.
Issued, October, 1912.
Annual sum, $1,028.31.
Property owners $665 32
Town 362 99
$1,028 31

	1914.	$215 56	$802 80
	1915.	227 41	790 94
	1916.	239 93	778 43
	1917.	253 12	1,530 46
		$936 02	$3,902 63
	1918.	267 05	751 31
	1919.	281 73	736 62
	1920.	297 22	721 12
	1921.	313 58	704 77
	1922.	330 82	687 52
	1923.	349 01	669 32
	1924.	368 21	650 12
	1925.	388 46	629 87
	1926.	409 82	608 50
	1927.	432 36	585 96
	1928.	456 15	562 18
	1929.	481 23	537 09
	1930.	507 69	510 62
	1931.	535 62	482 70
	1932.	565 08	453 24
	1933.	596 15	422 16
	1934.	628 95	389 37
	1935.	663 53	354 83
	1936.	700 02	318 29
	1937.	738 53	279 79
	1938.	779 14	239 17
	1939.	822 00	196 32
	1940.	867 20	151 11
	1941.	914 90	103 41
	1942.	965 22	53 09
		$14,595 69	$15,701 11

	Year.	Principal.	Interest.
Next payment,	1914.	$5,000 00	$291 67
Number 871.	1915.	.....	275 65
Term, 10 months.			
Interest, 7%.		$5,000 00	$567 32

Purpose, Public School Building Site.
Issued 20 October, 1913.
Annual sum, $5,291.67.

Next payment,	1915.	$271 46	$75 00
Number 877.	1916.	285 03	61 43
Term, 5 years.	1917.	299 29	47 17
Interest, 5% per annum.		$855 78	$183 60
Purpose, Public Library Lands.	1918.	314 25	32 21
Issued 1 November, 1914.	1919.	329 97	16 49
Annual sum, $346.46		$1,500 00	$232 30

	Year.	Principal.	Interest.
Next payment,	1917.	$716 98	$1,375 00
Number 919.	1918.	756 42	1,335 56
Term, 20 years.	1919.	798 02	1,293 96
Interest, 5½% per annum.	1920.	841 91	1,250 07
Purpose, Floating Debt.	1921.	888 23	1,203 75
Issued 1 May, 1916.	1922.	937 07	1,154 91
Annual sum, $2,091.98.	1923.	988 61	1,103 37
	1924.	1,042 98	1,049 00
	1925.	1,100 35	991 63
	1926.	1,160 86	931 12
	1927.	1,224 70	867 28
	1928.	1,292 07	799 91
	1929.	1,363 13	728 85
	1930.	1,438 11	653 87
	1931.	1,517 20	574 78
	1932.	1,600 65	491 33
	1933.	1,688 68	403 30
	1934.	1,781 56	310 42
	1935.	1,879 55	212 43
	1936.	1,982 92	109 06
		$25,000 00	$16,839 60
Next payment,	1914.	$126 43	$393 98
Number 791.	1915.	132 75	387 66
Term, 30 years.	1916.	139 40	381 01
Interest, 5% per annum.	1917.	146 35	374 06
Purpose, Permanent Sidewalks.			
Issued 1 May, 1912.		$544 93	$1,536 71
Annual sum, $520.41.	1918.	153 68	366 73
	1919.	161 36	359 05
	1920.	169 43	350 98
	1921.	177 90	342 51
	1922.	186 80	333 61
	1923.	196 14	324 27
	1924.	205 95	314 46
	1925.	216 25	304 16
	1926.	227 05	293 36
	1927.	238 41	282 00
	1928.	250 33	270 08
	1929.	262 85	275 56
	1930.	275 98	244 43
	1931.	289 78	230 63
	1932.	304 28	216 13
	1933.	319 49	200 92
	1934.	335 46	184 95
	1935.	352 24	168 17
	1936.	369 84	150 57
	1937.	388 34	132 07
	1938.	407 75	112 66
	1939.	428 15	92 26
	1940.	449 54	70 87
	1941.	472 03	48 38
	1942.	495 63	24 78
		$7,879 59	$7,230 30
Next payment,	1913.	$102 73	$320 10
Number 787.	1914.	107 86	314 97
Term, 30 years.	1915.	113 26	309 57
Interest, 5% per annum.	1916.	118 92	303 91
Purpose, Water and Light Extension.	1917.	124 86	297 97
Issued October, 1911.			
Annual sum, $422.83.		$567 63	$1,546 52
	1918.	131 11	291 72
	1919.	137 66	285 17
	1920.	144 55	278 28
	1921.	151 77	271 06

Year.	Principal.	Interest.
1922.	159 36	263 47
1923.	167 33	255 50
1924.	175 70	247 13
1925.	184 48	238 35
1926.	193 71	229 12
1927.	203 39	219 44
1928.	213 56	209 27
1929.	224 24	198 59
1930.	235 46	187 37
1931.	247 22	175 61
1932.	259 58	163 25
1933.	272 55	150 28
1934.	286 19	136 64
1935.	300 50	122 33
1936.	315 53	107 30
1937.	331 30	91 53
1938.	347 87	74 96
1939.	365 26	57 57
1940.	383 52	39 31
1941.	402 70	20 13
	$6,402 17	$5,859 90

Next payment, 1913.
Number 772.
Term, 20 years.
Interest, 5% per annum.
Purpose, Extending Electric Light.
Issued May, 1912.
Annual sum, $1,043.15.

1913.	$412 81	$630 34
1914.	433 45	609 70
1915.	455 13	588 02
1916.	477 87	565 28
1917.	501 78	541 37
	$2,281 04	$2,934 71
1918.	526 86	516 29
1919.	553 21	489 94
1920.	580 87	462 28
1921.	609 90	433 25
1922.	640 40	402 75
1923.	672 43	370 72
1924.	706 05	337 10
1925.	741 35	301 80
1926.	778 42	264 73
1927.	817 34	225 81
1928.	858 21	184 94
1929.	901 12	142 03
1930.	946 17	96 98
1931.	993 48	49 67
	$12,606 85	$7,213 00

Debentures, 1 January, 1913, to 31 December, 1917.

Next payment. 1913.
Number 764.
Term, 28 years.
Interest, 5% per annum.
Purpose, Sewers.
Issued October, 1911.
Annual Sum, $154.17.
Town's Share $51 71
Property Owners ... 102 46
$154 17

1913.	$43 35	$110 82
1914.	45 53	108 64
1915.	44 15	110 02
1916.	46 36	107 81
1917.	48 67	105 50
	$228 06	$542 79
1918.	51 11	103 06
1919.	53 66	100 51
1920.	56 35	97 82
1921.	59 16	95 01
1922.	62 12	92 05
1923.	65 22	88 95
1924.	68 49	85 68
1925.	71 91	82 26
1926.	75 51	78 66
1927.	79 29	74 88
1928.	83 25	70 92

	Year.	Principal.	Interest.
	1929.	87 41	66 76
	1930.	91 78	62 39
	1931.	196 37	57 80
	1932.	101 19	52 98
	1933.	106 25	47 92
	1934.	111 56	42 61
	1935.	117 14	37 03
	1936.	123 00	31 17
	1937.	129 15	25 02
	1938.	135 60	18 57
		$2,053 58	$1,954 84
Next payment,	1913.	$420 10	$542 81
Number, 713.	1914.	441 12	521 79
Term, 20 years.	1915.	463 18	499 73
Interest, 5% per annum.	1916.	486 33	476 58
Purpose, Permanent Walks.	1917.	510 65	452 26
Issued 30 October, 1909.			
Annual Sum, $962.91.		$2,321 38	$2,493 17
	1918.	536 18	426 73
	1919.	562 99	399 92
	1920.	591 14	371 77
	1921.	620 70	342 21
	1922.	651 73	311 18
	1923.	684 37	278 54
	1924.	718 54	244 37
	1925.	754 46	208 45
	1926.	792 19	170 72
	1927.	831 80	131 11
	1928.	873 39	89 52
	1929.	917 06	45 85
		$10,855 93	$5,513 54
Next payment,	1913.	$101 87	$181 94
Number, 690.	1914.	106 97	176 84
Term, 25 years.	1915.	112 31	171 50
Interest, 5% per annum.	1916.	117 93	165 88
Purpose, Public School, Manley St.	1917.	123 82	159 99
Issued 27 October, 1908.			
Annual Sum, $283.81.		$562 90	$856 15
	1918.	130 02	153 79
	1919.	136 52	147 29
	1920.	143 34	140 47
	1921.	150 51	133 30
	1922.	158 04	125 77
	1923.	165 94	118 87
	1924.	174 24	109 57
	1925.	182 94	100 87
	1926.	192 09	91 72
	1927.	201 70	82 11
	1928.	211 78	72 03
	1929.	222 37	61 44
	1930.	233 49	50 32
	1931.	245 17	38 64
	1932.	257 42	26 39
	1933.	270 30	13 51
		$3,638 77	$2,322 24
Next payment,	1913.	$116 15	$339 21
Number, 783.	1914.	121 96	333 40
Term, 30 years.	1915.	128 07	327 29
Interest, 5% per annum.	1916.	134 47	320 89
Purpose, Sewers.	1917.	141 20	314 16
Issued 30 October, 1911.			
Annual Sum, $455.36.		$641 85	$1,634 95

		Year.	Principal.	Interest.
Town's Share	$111 37	1918.	148 26	307 10
Property Owners ...	343 99	1919.	155 67	299 69
		1920.	163 44	291 92
	$455 36	1921.	171 62	283 74
		1922.	180 20	275 16
		1923.	189 21	266 15
		1924.	198 68	256 68
		1925.	208 60	246 76
		1926.	219 04	236 32
		1927.	229 98	225 38
		1928.	241 47	213 89
		1929.	253 57	201 79
		1930.	266 24	189 12
		1931.	279 56	175 80
		1932.	293 52	161 84
		1933.	308 21	147 15
		1934.	323 62	131 74
		1935.	339 80	115 56
		1936.	356 76	98 60
		1937.	374 63	80 73
		1938.	393 36	62 00
		1939.	413 03	42 33
		1940.	433 69	21 67
			$6,784 01	$5,966 07

	Year.	Principal.	Interest.
Next payment,	1913.	$324 00	$1,009 55
Number, 752.	1914.	340 18	993 37
Term, 30 years.	1915.	357 19	976 36
Interest, 5% per annum.	1916.	375 05	958 50
Purpose, New School, West Side.	1917.	393 80	939 75
Issued 1 May, 1911.			
Annual Sum, $1,333.55.		$1,790 22	$4,877 53
	1918.	413 49	920 06
	1919.	434 16	899 39
	1920.	455 68	877 67
	1921.	478 67	854 88
	1922.	502 60	830 95
	1923.	527 72	805 83
	1924.	554 11	779 44
	1925.	581 82	751 73
	1926.	610 91	722 64
	1927.	641 47	692 08
	1928.	673 53	660 02
	1929.	707 21	626 34
	1930.	742 57	590 98
	1931.	779 70	553 85
	1932.	818 69	514 86
	1933.	859 60	473 95
	1934.	902 59	430 96
	1935.	947 75	385 80
	1936.	995 13	338 42
	1937.	1,044 88	288 67
	1938.	1,097 13	236 42
	1939.	1,151 99	181 56
	1940.	1,209 57	123 98
	1941.	1,270 06	63 49
		$20,191 25	$18,481 50

	Year.	Principal.	Interest.
Next payment,	1913.	$56 68	$79 73
Number, 753.	1914.	59 51	76 90
Term, 20 years.	1915.	62 49	73 92
Interest, 5% per annum.	1916.	65 62	70 79
Purpose, Public Schools.	1917.	68 90	67 51
Issued December, 1911.			
Annual Sum, $136.41.		313 20	$368 85

	Year.	Principal.	Interest.
	1918.	72 34	64 07
	1919.	75 96	60 45
	1920.	79 76	56 65
	1921.	83 74	52 67
	1922.	87 93	48 48
	1923.	92 33	44 08
	1924.	96 93	39 48
	1925.	101 81	34 60
	1926.	106 89	29 52
	1927.	112 23	24 18
	1928.	117 84	18.57
	1929.	123 74	12.67
	1930.	129 91	6.50
		$1,594 61	$860 77
Next payment,	1913.	$130 67	$357 21
Number, 718.	1914.	137 21	350 67
Term, 30 years.	1915.	144 07	343 81
Interest, 5% per annum.	1916.	151 27	336 61
Purpose, Water and Light Extension.	1917.	158 83	329 05
Issued 21 December, 1909.			
Annual Sum, $487.88.		$722 05	$1,717 35
	1918.	166 73	321 10
	1919.	175 13	312 75
	1920.	183 89	303 99
	1921.	193 08	294 80
	1922.	202 74	285 14
	1923.	212 87	275 01
	1924.	223 51	264 37
	1925.	234 69	253 19
	1926.	246 42	241 46
	1927.	258 74	229 14
	1928.	271 68	216 20
	1929.	285 26	202 62
	1930.	299 52	188 36
	1931.	314 50	173 38
	1932.	330 22	157 66
	1933.	346 73	141 15
	1934.	364 07	123 81
	1935.	382 27	105 61
	1936.	401 38	86 50
	1937.	421 45	66 43
	1938.	442 52	45 36
	1939.	464 65	23 23
		$7,144 15	$6,028 61
Next payment,	1913.	$518 67	$1,237 72
Number, 662.	1914.	544 60	1,211 79
Term, 30 years.	1915.	571 83	1,184 56
Interest, 5% per annum.	1916.	600 42	1,155 97
Purpose, Manley St. Pub. School Bldg.	1917.	630 44	1,125 95
Issued December, 1907.			
Annual Sum, $1,756.39.		$2,865 96	$5,915 99
	1918.	661 97	1,094 42
	1919.	695 06	1,061 32
	1920.	729 82	1,026 57
	1921.	766 31	990 08
	1922.	804 62	951 76
	1923.	844 85	911 54
	1924.	887 09	869 30
	1925.	931 45	824 94
	1926.	978 02	778 37
	1927.	1,026 92	729 47
	1928.	1,078 27	678 12
	1929.	1,132 18	624 21

	Year.	Principal.	Interest.	
	1930.	1,188 80	567 59	
	1931.	1,248 23	508 16	
	1932.	1,310 64	445 75	
	1933.	1,376 18	380 21	
	1934.	1,444 99	311 40	
	1935.	1,517 23	239 16	
	1936.	1,593 10	163 29	
	1937.	1,672 75	83 64	
		$24,754 44	$19,155 29	
1912 Interest paid in 1913		.....		$133 16

Debentures, 1 January, 1913, to 31 December, 1917.

Next payment,	1913.	$60 83	$210 88	
Number 567 (a).	1914.	63 57	208 14	
Term, 40 years.	1915.	66 43	205 28	
Interest, 4% per annum.	1916.	69 42	202 29	
Purpose, 3rd Instalment of Sewers.	1917.	72 54	199 17	
Issued 29 December, 1906.				
Annual Sum, $271.71.		$332 79	$1,025 76	
	1918.	75 81	195 90	
	1919.	79 22	192 49	
	1920.	82 79	188 92	
	1921.	86 51	185 20	
	1922.	90 41	181 30	
	1923.	94 48	177 23	
	1924.	98 73	172 98	
	1925.	103 17	168 54	
	1926.	107 81	168 90	
	1927.	112 67	159 04	
	1928.	117 74	153 97	
	1929.	123 04	148 67	
	1930.	128 57	143 14	
	1931.	134 36	137 35	
	1932.	140 40	131 31	
	1933.	146 72	124 99	
	1934.	153 33	118 38	
	1935.	160 23	111 48	
	1936.	167 44	104 27	
	1937.	174 96	96 75	
	1938.	182 84	88 87	
	1939.	191 07	80 64	
	1940.	199 66	72 05	
	1941.	208 65	63 06	
	1942.	218 04	53 67	
	1943.	227 85	43 86	
	1944.	238 11	33 60	
	1945.	248 82	22 89	
	1946.	260 02	11 69	
		$4,686 24	$4,551 90	
Next payment,	1913.	$325 33	$384 82	
Number, 670.	1914.	341 59	368 56	
Term, 20 years.	1915.	358 67	351 48	
Interest, 4½% per annum.	1916.	376 61	333 54	
Purpose, Bank Overdrafts.	1917.	395 44	314 71	
Issued 15 February, 1908.				
Annual Sum, $710.15.		$1,797 64	$1,753 11	
	1918.	415 21	294 94	
	1919.	435 97	274 18	
	1920.	457 77	252 38	
	1921.	480 65	229 50	
	1922.	504 69	205 46	

Year.	Principal.	Interest.
1923.	529 82	180 23
1924.	556 42	153 73
1925.	584 24	125 91
1926.	613 45	96 70
1927.	644 12	66 03
1928.	676 33	33 82
	$7,696 41	$3,665 99

Debentures, 1 January, 1913, to 31 December, 1917.

Number, 479.
Term, 40 years.
Interest, 4% per annum.
Purpose, Water Works.
Issued 13 May, 1900.
Annual Sum, $3,031.41.

Next payment,		
1912.	$934 63	$1,034 45
1913.	972 03	2,059 38
1914.	1,010 91	2,020 50
1915.	1,051 34	1,980 07
1916.	1,093 40	1,938 01
1917.	1,137 13	1,894 28
	$6,199 44	$10,926 69
1918.	1,182 62	1,848 79
1919.	1,229 92	1,801 49
1920.	1,279 12	1,752 29
1921.	1,330 29	1,701 12
1922.	1,383 49	1,647 92
1923.	1,438 84	1,592 57
1924.	1,496 39	1,535 02
1925.	1,556 25	1,475 16
1926.	1,618 50	1,412 91
1927.	1,683 23	1,348 18
1928.	1,750 57	1,280 84
1929.	1,820 58	1,210 83
1930.	1,893 41	1,138 00
1931.	1,969 15	1,062 26
1932.	2,047 91	983 50
1933.	2,129 83	901 58
1934.	2,215 02	816 39
1935.	2,303 62	727 79
1936.	2,395 77	635 64
1937.	2,491 60	539 81
1938.	2,591 25	440 16
1939.	2,694 91	336 50
1940.	2,802 71	228 70
1941.	2,914 83	116 58
	$52,419 25	$37,460 72

Number, 518.
Term, 30 years.
Interest, 4% per annum.
Purpose, Harbour Docks.
Issued 15 September, 1902.
Annual Sum, $578.30.

Next payment,		
1913.	$263 92	$314 38
1914.	274 48	303 82
1915.	285 46	292 84
1916.	296 88	281 42
1917.	308 76	269 54
	$1,429 50	$1,462 00
1918.	321 11	257 19
1919.	333 96	244 34
1920.	347 32	230 98
1921.	361 21	217 09
1922.	375 66	202 64
1923.	390 68	187 62
1924.	406 31	171 99
1925.	422 56	155 74
1926.	439 47	138 83
1927.	457 04	121 26
1928.	475 33	102 97

Year.	Principal.	Interest.
1929.	494 34	83 96
1930.	514 11	64 19
1931.	534 63	43 62
1932.	556 06	22 24
	$7,859 34	$3,706 66

Debentures, 1 January, 1913, to 31 December, 1917.

Next payment, 1912.
Number, 532.
Term, 30 years.
Interest, 4½% per annum.
Purpose, Electric Light.
Issued 16 March, 1903.
Annual Sum, $1,227.83.

1912.	$466 21	$761 62
1913.	487 19	740 64
1914.	509 11	718 72
1915.	532 02	695 81
1916.	555 96	671 87
1917.	580 98	646 85
	$3,131 47	$4,235 51
1918.	607 12	620 71
1919.	634 44	593 39
1920.	662 99	564 84
1921.	692 83	535 00
1922.	724 03	503 80
1923.	756 59	471 24
1924.	790 63	437 20
1925.	826 21	401 62
1926.	863 39	364 44
1927.	902 24	325 59
1928.	942 85	284 98
1929.	985 27	242 56
1930.	1,029 61	198 22
1931.	1,075 95	151 88
1932.	1,124 36	103 47
1933	1,174 96	52 87
	$16,924 94	$10,087 32

Next payment, 1913.
Number, 517.
Term, 30 years.
Interest, 4% per annum.
Purpose, Water Works Extension.
Issued 15 September, 1902.
Annual Sum, $578.30.

1913.	$263 92	$314 38
1914.	274 48	303 82
1915.	285 46	292 84
1916.	296 88	281 42
1917.	308 76	269 54
	$1,429 50	$1,462 00
1918.	321 11	257 19
1919.	333 96	244 34
1920.	347 32	230 98
1921.	361 21	217 09
1922.	375 66	202 64
1923.	390 68	187 62
1924.	406 31	171 99
1925.	422 56	155 74
1926.	439 47	138 83
1927.	457 04	121 26
1928.	475 33	102 97
1929.	494 34	83 96
1930.	514 11	64 19
1931.	534 68	43 62
1932.	556 06	22 24
	$7,859 34	$3,706 66

Debentures, 1 January, 1913, to 31 December, 1917.

	Year.	Principal.	Interest.
Next payment,	1913.	$159 44	$492 68
Number, 567 (*b*).	1914.	166 61	485 51
Term, 40 years.	1915.	174 11	478 01
Interest, 4½% per annum.	1916.	181 95	470 17
Purpose, Construction of Sewers.	1917.	190 13	461 99
Issued 29 December, 1904.			
Annual Sum, $652.12.		$872 24	$2,388 36
	1918.	198 69	453 43
	1919.	207 64	444 48
	1920.	216 98	435 14
	1921.	226 74	425 38
	1922.	236 95	415 17
	1923.	247 61	404 51
	1924.	258 75	393 37
	1925.	270 39	381 73
	1926.	282 56	369 56
	1927.	295 28	356 84
	1928.	308 57	343 55
	1929.	322 45	329 67
	1930.	336 96	315 16
	1931.	352 13	299 99
	1932.	367 97	284 15
	1933.	384 53	267 59
	1934.	401 84	250 28
	1935.	419 92	232 20
	1936.	438 82	213 30
	1937.	458 56	193 56
	1938.	479 20	172 92
	1939.	500 74	151 38
	1940.	523 30	128 82
	1941.	546 85	105 27
	1942.	571 46	80 66
	1943.	597 17	54 95
	1944.	624 05	28 07
		$10,948 35	$9,919 49
Next payment,	1913.	$194 88	$296 24
Number, 548.	1914.	203 64	287 49
Term, 30 years.	1915.	212 81	278 32
Interest, 4½% per annum.	1916.	222 38	268 75
Purpose, Extension and Improvement of Electric Light Plant.	1917.	232 39	258 74
Issued 25 November, 1903.		$1,066 10	$1,389 54
Annual Sum, $491.13.			
	1918.	242 85	248 28
	1919.	253 78	237 35
	1920.	265 20	225 93
	1921.	277 13	214 00
	1922.	289 60	201 53
	1923.	202 63	188 50
	1924.	316 25	174 88
	1925.	330 48	160 65
	1926.	345 36	145 77
	1927.	360 90	130 23
	1928.	377 14	113 99
	1929.	394 11	97 02
	1930.	411 84	79 29
	1931.	430 38	60 75
	1932.	449 74	41 39
	1933.	469 98	21 15
		$6,483 47	$3,730 25

Debentures, 1 January, 1913, to 31 December, 1917.

	Year.	Principal.	Interest.
Next payment,	1913.	$223 07	$390 84
Number, 589.	1914.	233 11	380 80
Term, 30 years.	1915.	243 59	370 32
Interest, 4½% per annum.	1916.	254 56	359 35
Purpose, Payment of Overdraft, Bank B. N. A.	1917.	266 01	347 90
Issued 25 May, 1905.		$1,220 34	$1,849 21
Annual Sum, $613.91.			
	1918.	277 98	335 93
	1919.	290 49	323 42
	1920.	303 56	310 35
	1921.	317 22	296 69
	1922.	331 50	282 41
	1923.	346 42	267 49
	1924.	362 00	251 91
	1925.	378 29	235 62
	1926.	395 32	218 59
	1927.	413 11	200 80
	1928.	431 70	182 21
	1929.	451 12	162 79
	1930.	471 42	142 49
	1931.	492 64	121 27
	1932.	514 81	99 10
	1933.	537 97	75 94
	1934.	562 18	51 73
	1935.	587 48	26 43
		$8,685 55	$5,434 38
Next payment,	1913.	$233 11	$380 80
Number, 573.	1914.	243 59	370 32
Term, 30 years.	1915.	254 56	359 35
Interest, 4½% per annum.	1916.	266 01	347 90
Purpose, High School.	1917.	277 98	335 93
Issued 6 September, 1904.			
Annual Sum, $613.91.		$1,275 25	$1,794 30
	1918.	290 49	323 42
	1919.	303 56	310 35
	1920.	317 22	296 69
	1921.	331 50	282 41
	1922.	346 42	267 49
	1923.	362 00	251 91
	1924.	378 29	235 62
	1925.	395 32	218 59
	1926.	413 11	200 80
	1927.	431 70	182 21
	1928.	451 12	162 79
	1929.	471 42	142 49
	1930.	492 64	121 27
	1931.	514 81	99 10
	1932.	537 97	75 94
	1933.	562 18	51 73
	1934.	587 48	26 43
		$8,362 48	$5,043 54

Debentures, 1 January, 1913, to 31 December, 1917.

Next payment,	1913.	$111 53	$195 43
Number, 602.	1914.	116 56	190 40
Term, 30 years.	1915.	121 80	185 16
Interest, 4½% per annum.	1916.	127 28	179 68
Purpose, High School.	1917.	133 00	173 96
Issued 27 September, 1905.			
Annual Sum, $306.96.		$610 17	$924 63

	Year.	Principal.	Interest.
	1918.	138 99	167 97
	1919.	145 25	161 71
	1920.	151 78	155 18
	1921.	158 61	148 35
	1922.	165 74	141 22
	1923.	173 21	133 75
	1924.	181 00	125 96
	1925.	189 15	117 81
	1926.	197 66	109 30
	1927.	206 56	100 40
	1928.	215 85	91 11
	1929.	225 57	81 39
	1930.	235 71	71 25
	1931.	246 32	60 64
	1932.	257 41	49 55
	1933.	268 99	37 97
	1934.	281 09	25 87
	1935.	293 74	13 22
		$4,342 80	$2,717 23
Next payment,	1913.	$76 28	$249 78
Number, 567. 2nd Instalment, (c),	1914.	79 72	246 34
Term, 40 years.	1915.	83 31	242 75
Interest, 4½% per annum.	1916.	87 06	239 00
Purpose, Sewerage.	1917.	90 97	235 09
Issued 29 December, 1905,		$417 34	$1,212 96
Annual Sum, $326.06.	1918.	95 06	231 00
	1919.	99 35	226 71
	1920.	103 82	222 24
	1921.	108 49	217 57
	1922.	113 37	212 69
	1923.	118 48	207 58
	1924.	123 81	202 25
	1925.	129 38	196 25
	1926.	135 20	190 86
	1927.	141 28	184 78
	1928.	147 64	178 42
	1929.	154 28	171 78
	1930.	161 22	164 84
	1931.	168 48	157 58
	1932.	176 06	150 00
	1933.	183 98	142 08
	1934.	192 26	133 80
	1935.	200 92	125 14
	1936.	209 96	116 10
	1937.	219 41	106 65
	1938.	229 28	96 78
	1939.	239 60	86 46
	1940.	250 37	75 69
	1941.	261 65	64 41
	1942.	273 43	52 63
	1943.	285 73	40 33
	1944.	298 59	27 47
	1945.	312 03	14 03
		$5,550 47	$5,209 03

Debentures, 1 January, 1913, to 31 December, 1917.

Next payment,	1913.	$640 38	$1,201 37
Number, 619.	1914.	669 20	1,172 55
Term, 30 years.	1915.	699 31	1,142 44
Interest, 4½% per annum.	1916.	730 78	1,110 97
Purpose, Permanent Walks.	1917.	763 67	1,078 08
Issued 15 September, 1905.		$3,503 34	$5,705 41
Annual Sum, $1,841.25.			

	Year.	Principal.	Interest.
	1918.	798 03	1,043 72
	1919.	833 94	1,007 81
	1920.	871 47	970 28
	1921.	910 69	931 06
	1922.	951 67	890 08
	1923.	994 50	847 25
	1924.	1,039 24	802 51
	1925.	1,086 01	755 74
	1926.	1,134 88	706 87
	1927.	1,185 95	655 80
	1928.	1,239 32	602 43
	1929.	1,295 09	546 66
	1930.	1,353 37	488 38
	1931.	1,414 27	427 48
	1932.	1,477 91	363 84
	1933.	1,544 42	297 33
	1934.	1,613 92	227 83
	1935.	1,686 54	155 21
	1936.	1,762 44	79 31
		$26,697 00	$17,505 00

Next payment.
Number, 609.
Term, 40 years.
Interest, 4½% per annum.
Purpose, Sewer Frontage.
Issued 7 December, 1905.
Annual Sum, $1,136.86.

1913.	$265 99	$870 87
1914.	277 96	858 90
1915.	290 46	846 40
1916.	303 54	833 32
1917.	317 20	819 66
	$1,455 15	$4,229 15
1918.	331 47	805 39
1919.	346 39	790 47
1920.	361 97	774 89
1921.	378 26	758 60
1922.	395 29	741 57
1923.	413 07	723 79
1924.	431 66	705 20
1925.	451 09	685 77
1926.	471 39	665 47
1927.	492 60	644 26
1928.	514 77	622 09
1929.	537 93	598 93
1930.	562 14	574 72
1931.	587 44	549 42
1932.	613 88	522 98
1933.	641 50	495 36
1934.	670 36	466 50
1935.	700 53	436 33
1936.	732 05	404 81
1937.	765 00	371 86
1938.	799 42	337 44
1939.	835 40	301 46
1940.	872 99	263 87
1941.	912 28	224 58
1942.	953 33	183 53
1943.	996 25	140 61
1944.	1,041 06	95 80
1945.	1,097 91	48 95
	$19,362 58	$18,163 80

Debentures, 1 January, 1913, to 31 December, 1917.

	Year.	Principal.	Interest.
	Next payment, 1913.	$1,159 66	$394 40
Number, 669.	1914.	1,217 64	336 42
Term, 10 years.	1915.	1,273 52	275 54
Interest, 5% per annum.	1916.	1,342 44	211 62
Purpose, Water and Light Improvements.	1917.	1,409 58	144 48
Issued 27th January, 1908.		$6,407 84	$1,362 46
Annual Sum, $1,554.06.			
	1918.	1,480 06	74 00
		$7,387 90	$1,436 46
	Next payment, 1913.	$402 68	$169 98
Number, 618.	1914.	420 80	151 86
Term, 15 years.	1915.	439 74	132 92
Interest, 4½% per annum.	1916.	459 52	113 14
Purpose, Sewer Construction.	1917.	480 20	92 46
Issued 15 December, 1906.		$2,202 94	$660 36
Annual Sum, $572.66.	1918.	501 81	70 85
	1919.	524 39	48 27
	1920.	547 99	24 67
		$3,777 13	$804 15
	Next payment, 1913.	$1,234 27	$154 91
Number, 626.	1914.	1,271 30	117 88
Term, 10 years.	1915.	1,309 44	79 74
Interest, 3% per annum.	1916.	1,348 72	40 46
Purpose, Purchase of Fenzer Park.			
Issued 2nd July, 1906.		$5,163 73	$392 99
Annual Sum, $1,389.13.			
	Next payment, 1913.	$113 99	$9 30
Number, 584.	1914.	118 55	4 74
Term, 10 years.			
Interest, 4% per annum.		$232 54	$14 04
Purpose, Hospital.			
Issued 17th January, 1905.			
Annual Sum, $123.29.			

Debentures, 1 January, 1913, to 31 December, 1917.

	Year.	Principal.	Interest.
	Next payment, 1918.	$716 98	$1,375 00
Number, 953.	1919.	756 42	1,335 56
Term, 20 years.	1920.	798 02	1,293 96
Interest, 5½% per annum.	1921.	841 91	1,250 07
Purpose, Aid to Midland Dry Dock Co.	1922.	888 23	1,203 75
	1923.	937 07	1,154 91
Issued 1st November, 1917.	1924.	988 61	1,103 37
Annual Sum, $2,091.98.	1925.	1,042 98	1,049 00
	1926.	1,100 35	991 63
	1927.	1,160 86	931 12
	1928.	1,224 70	867 28
	1929.	1,292 07	799 91
	1930.	1,363 13	728 85
	1931.	1,438 11	653 87
	1932.	1,517 20	574 78
	1933.	1,600 65	491 33
	1934.	1,688 68	403 30
	1935.	1,781 56	310 42
	1936.	1,879 55	212 43
	1937.	1,982 92	109 06
		$25,000 00	$16,839 60

Next payment,
Number, 967.
Term, 20 years.
Interest, 6% per annum.
Purpose, Patriotic Grants.
Issued 1st December, 1917.
Annual Sum, $2,179.61.

Year.	Principal.	Interest.
1918.	$679 61	$1,500 00
1919.	720 46	1,459 21
1920.	763 61	1,416 00
1921.	809 43	1,370 18
1922.	858 00	1,321 61
1923.	909 48	1,270 13
1924.	964 04	1,215 57
1925.	1,021 89	1,157 72
1926.	1,083 21	1,096 40
1927.	1,148 19	1,031 42
1928.	1,217 08	962 53
1929.	1,290 11	889 50
1930.	1,367 52	812 09
1931.	1,449 57	730 04
1932.	1,536 54	643 07
1933.	1,628 73	550 88
1934.	1,726 46	453 15
1935.	1,830 04	349 57
1936.	1,939 85	239 76
1937.	2,056 24	123 37
	$25,000 00	$18,592 20

CORPORATION OF THE TOWN OF MIDLAND—Schedule E.

DEBENTURE LEVY—REQUIREMENTS FOR YEAR 1918.

By-law No.	General.	Schools.	Water and Light.	Sewers.	Benson & Bray.
	$ c.	$ c.	$ c.	$ c.	$ c.
360....	1,626 28	.....	.....	.....	.....
410....	2,526 17	.....	.....	.....	.....
446....	.....	260 21	.....	.....	.....
479....	.....	.....	3,031 41	.....	.....
518....	578 30	.....	.....	.....	.....
517....	.....	.....	578 30	.....	.....
532....	.....	.....	1,227 83	.....	.....
548....	.....	.....	491 13	.....	.....
567....	.....	.....	.....	652 18	.....
573....	.....	613 91	.....	.....	.....
589....	613 91	.....	.....	.....	.....
567....	.....	.....	.....	326 06	.....
602....	.....	306 96	.....	.....	.....
609....	.....	.....	.....	1,136 86	.....
619....	1,841 75	.....	.....	.....	.....
567....	.....	.....	.....	271 71	.....
670....	710 15	.....	.....	.....	.....
618....	.....	.....	.....	572 66	.....
662....	.....	1,756 39	.....	.....	.....
669....	.....	.....	1,554 06	.....	.....
690....	.....	283 81	.....	.....	.....
713....	962 91	.....	.....	.....	.....
718....	.....	.....	487 88	.....	.....
753....	.....	136 41	.....	.....	.....
752....	.....	1,333 55	.....	.....	.....
783....	.....	.....	.....	455 36	.....
764....	.....	.....	.....	154 17	.....
787....	.....	.....	422 83	.....	.....
772....	.....	.....	1,043 15	.....	.....
812....	.....	.....	.....	.....	2,006 06
791....	520 41	.....	.....	.....	.....
851....	.....	.....	975 56	.....	.....
855....	.....	.....	.....	1,028 31	.....
877....	346 46	.....	.....	.....	.....
918....	.....	.....	894 49	.....	.....
908....	.....	2,752 22	.....	.....	.....
919....	2,091 98	.....	.....	.....	.....
953....	2,091 98	.....	.....	.....	.....
967....	2,179 61	.....	.....	.....	.....
	16,089 91	7,443 46	10,706 64	4,597 31	2,006 06

SUMMARY

$16,089 91
7,443 46
10,706 64
4,597 31
2,006 06
$40,843 38

Subject to our Report dated 3rd September, 1918.

CORPORATION OF THE TOWN OF MIDLAND.

Schedule F.

1910 Taxes Outstanding as at 31st March, 1918.

Roll No.	Name.	General Taxes.
110	Brock, Jno.	$2 50
512	Gould, C. H.	5 00
722	Long, A.	2 50
741	Lavery, J. J.	2 50
954	Bennett, W. H.	14 08
1174	Smith, Waverley	2 50
1238	Sanderson, Ellen	11 13
		$40 21

1911 Taxes Outstanding as at 31st March, 1918.

131	Brock, J. W.	$3 25
205	Carmichael, T.	2 03
313	Carson, W., Jr.	6 50
828	Long, A.	3 12
1139	McGaw, J.	17 04
		$31 94

1912 Taxes Outstanding as at 31st March, 1918.

119	Stone, J.	$2 80
204	Burke, D.	2 80
224	Bennett, W. H.	14 40
500	Boland, W.	2 80
244	Callahon, J.	7 00
246	Carmichael, T.	18 34
388	Dale, W. R.	16 10
466	Foster, E.	1 72
452	Fraser, Michael	288 40
531	McGregor, J.	37 50
519	Grise, D.	11 63
670	Kilman, J.	70 40
1470	Lavery, J. J.	2 80
898	McGaw, J. H.	26 32
1161	Stephens, R.	36 40
1168	Smith, Waverley	2 80
1173	Public School	3 92
1229	Terry, T. W.	71
1276	Webber, Robt.	16 16
1276	Cowdrey, G.	25 20
1257	White, R. F.	45 03
		$633 28

Subject to our Report dated 3rd September, 1918.

Schedule F.

1913 Taxes Outstanding as at 31st March, 1918.

Roll No.	Name.	General Taxes.
15	Adams, Wm.	$17 50
69	Baker, D.	3 72
160	Boirrie, A.	2 80
	Baptist Church	3 91
	Sheare, T.	8 40
178	Grace, E.	2 80
179	Beeton, D. H.	5 60
206	Calligan, J.	10 50

		General Taxes.
770	Casson, D.	7 70
324	Canada Iron Corporation	11 20
378	Cadiere, O.	2 80
330	Chadwick, A.	5 04
387	Heron, Chas.	7 00
429	Edwards, F.	4 20
443	Foster, J.	39 72
484	Brisbin, F.	6 75
471	Foley, Peter	10
537	Gregory, P. G.	8 40
280	Garraway, E.	2 80
560	Gregory, H. R.	5 60
576	Guy, T.	8 40
634	Howard E.	15 10
651	Hebert, F.	3
691	Hartley, J.	39 20
725	Jamieson, J.	17 72
754	Kilman, J. L.	73 20
765	Klein, E. F.	5 60
773	Leatherby, J. F.	154 00
804	Lavery, J.	2 80
821	Leatherby, J., Jr.	10 80
837	Martin, S.	2 80
846	Mealia, J.	36 08
883	Moore, H. J.	25 06
440	Mohan, J.	5 60
548	Morrison, B.	11 20
1080	Macdonald, J. F.	5 60
1085	McBride, Miss	12 60
1095	McGaw, J.	30 52
1189	Morris, F.	2 80
1216	Price, T. H.	5 04
1095	McGee, J.	5 60
1326	Silverthorne, J.	24 64
1327	Silvey, J.	18 20
1363	Smith, W.	2 80
1356	Stephens, R.	40
1386	Simpson, A.	25 31
1394	Sloane, C. S.	4 90
1452	Kerr, J.	2 80
1453	Thompson, B. E.	8 40
1462	Trueman & Haggart	5 60
1499	White, R. F.	58 65
1508	McKay, M.	4 20
1554	Wannamaker	2 80
1556	Wannamaker, Jos.	2 80
1566	Young, H.	40 64
1571	Yorex, A.	5 04
1391	Steer, John	7 64
1081	McLeod, Miss	2 80
1437	Terry, T. W.	7 53
86	Baldwin, J. A.	8 60
315	Caston	3 16
472	Kinch	4 20
		$867 40

Schedule F.

1914 Taxes Outstanding as at 31st March, 1918.

Roll No.	Name.	General Taxes
98	Baldwin, C.	$33 60
172	Brock, Wm.	4 20
189	Grace, E. M.	2 80
225	Callahan, Jas.	11 20
211	Carmichael, Thos.	17 20

		General Taxes.
219	Chapel, Ed.	14 00
385	Davidson, F. H.	20 00
399	Davenport, Jos.	11 29
429	Dunn, J. L.	10 20
476	Foster, Jno.	1 80
477	Woon, Jno.	2 80
503	Kinch, W.	2 80
381	Dunn, Jas.	4 45
465	Eggleton, Geo.	5 60
534	Griffin, Rose	5 60
556	Palmer, Carl	12 60
562	Gregory, P. G.	8 40
586	Gregory, H. R.	14 00
593	McGregor, Jas.	16 92
596	Wilson, G. K.	8 40
639	Hacker, Wm.	43 28
652	Harkley, Wm.	36 08
714	Hewitt, Jas.	8 40
725	Hallman, Thos.	2 80
772	Jamieson, J. W.	29 40
803	Kellman, J. L.	73 20
822	Leatherby, J. A.	131 60
551	Gerow, D.	5 60
854	Lavery, J. J.	2 80
874	Leatherby, J. A.	15 80
949	Cuson, A.	2 80
977	Masters, J. W.	15 40
982	Murphy, Wm.	2 80
1029	Crombie, Chas.	8 40
1056	McCracken, R.	40
1088	Cutler, Percy	2 80
1099	Copen, W.	2 80
1119	McDonald, Sarah	5 60
1125	McGaw, Jas.	28 00
1129	Moon, J. G.	9 80
1130	McKinley, B. W.	14 00
1151	Park, R. H.	5 60
1176	Noble, E.	3 20
1193	Oshia, F.	20 42
293	Pegott, E. H.	28 11
1253	Morris, F.	2 80
756	Strathearn, G.	11 20
794	Ross, T.	8 53
1316	Jackson, W.	5 60
1380	Silvey, Jno.	13 20
1389	Sloan, Albert	38 64
1413	Smith, W.	2 80
1421	Swinson, D.	29 12
1451	Smith, H. E.	11 36
1455	Simcoe Crushed Stone Co.	5 60
1558	White, R. F.	53 05
1568	McKay, N.	4 20
1624	Trill	8 40
	Yates	17 50
242	Carr, Isabella	8 18
		$927 14

Schedule F.

1915 Taxes Outstanding as at 31st March, 1918.

Roll No.	Name. No Numbers given on Roll.	General Taxes.
	Gratto, J.	$3 00
	Bowie, W. A	58 50
	Button, W	3 00
	Baldwin, C	36 00
	Byrne, H. J. C.	6 90

	General Taxes.
Boland, W.	4 50
Parker, J. H.	11 10
Brown, C. M.	6 00
Carmichael, T.	21 00
Calahan, Jas.	12 00
Chew, Mrs. Thos.	124 95
Cave, W. G.	103 66
Calhoun, Geo.	33 45
Calcott, Wm., Est.	36 00
Craig, Jas.	22 60
Davenport, Jas.	79 50
Grace, E. M.	3 00
Dunn, Jno. L.	21 45
Foster, Jno.	55 50
Wood, J.	3 00
Follis, Emma	1 50
Froats, M.	11 55
Fyfe, K.	39 00
Griffin, Rose	6 00
Graham, Robt.	1 25
Gregory, P. G.	9 00
Hart, Norman	9 00
Horne, Jno., Jr.	8 30
Hacker, W. H.	45 88
Hacken, Wm.	25 53
Harkley, Wm.	40 85
Hocken, Henry	41 74
Hewis, Jno.	12 60
Hebert, Frank	9 00
Hopkins, C. B.	12 00
Hutchinson	34 37
Hart, A.	29 25
Cusson, A.	3 00
Jamieson, J. M.	31 50
Kelman, J. R.	78 00
Lucas, A. J.	24 00
Leatherby, J. A.	56 25
Lamb, Geo.	55 50
Lavery, J. J.	3 00
Wing, Chas.	7 50
Ormstein, C.	12 00
Leatherby, Jas. A.	33 00
Lamb, Jno. C.	3 00
Smith, Donald	9 00
Miron, Lena	9 00
Masters, Jno.	13 50
Murphy, Wm.	3 00
Gorman, J.	9 00
McNab, J. J.	3 00
Crombie, C.	9 00
McClinchy, Wm.	13 76
Cohen, Morris	3 00
McDonald, S. E.	6 00
Mohan, J. G.	10 50
McGregor, Alex.	6 00
McEachern, F.	3 00
Newburn, W. H.	30 00
Peters, Wm.	4 80
Robinson, J.	7 50
Ralph, R.	22 50
Robitaille, A.	99 38
Jackson, Wm.	3 00
Rivet, J. D.	3 00
Smith, Geo. H.	2 58
Preston, Frank	3 75
Silvey, Jno.	19 50

	General Taxes.
Smith, Waverley	3 00
Toole, Norman	10 30
Turner, Dwight	84 00
Taylor, Frank	8 20
Trill, Henry	3 96
Vincent, B.	6 00
VanLewen, W.	9 00
White, R. F.	56 55
Doogan, L.	4 50
Severski, Jos.	3 00
Wannamaker, W. J.	3 00
York, Bert	3 00
	$1,776 96

Schedule F.

1916 Taxes Outstanding as at 31st March, 1918.

Roll No.	Name.	General Taxes.
27	Atkinson, James	$10 20
	Bowel, Chas.	3 40
65	Baker, Annie	7 97
68	Barnett, Henry	20 38
82	Baldwin, J. A.	8 66
95	Baldwin, Catharine	41 65
108	Brighty, George	48 60
138	Barker, Clarence	40
142	Brown, Samuel	44 88
155	Boland, Wm.	5 10
	Corrigan, Daniel	28 05
212	Carmichael, Thos.	24 65
223	Callaghan, James	14 96
263	Cave, W. G.	174 52
309	Church, Maurice	27 20
312	Calcott, Wm., Estate	40 80
318	Cunningham, Wm.	105 09
	Cowdry, Geo.	45 44
	Carley, Laura	22 78
346	Courtney, Roy	34 00
348	Chew, Ella	46 10
384	Dunn, James	50
395	Doran, John	52 70
401	Davenport, Joseph	86 70
413	Doherty, Ellen	4 20
425	Dunn, John L.	23 95
438	Davis, Jane, Estate	3 40
	Folles, Jas., Estate	3 40
484	Foster, John	64 60
510	Froats, M.	12 55
521	Jane & Carson	14 28
551	Griffin, Rose	6 80
559	Graham, Robert	14 45
564	Gudewill, C. E.	91 80
580	Gregory, P. G.	11 05
	German, F.	25 50
595	Gladstone, Frances	42 32
610	Lee, Sam	10 20
659	Hart, Norman	11 22
	Hicks, H.	62 05
	Hamlin, Albert	36 66
698	Hinds, M. C.	61 42
708	Howard, Elizabeth	47 60
711	Hocken, Henry	8 08
	Hill, Ira	70 55
731	Hutchinson, George	39 77
738	Howard, Wm.	11 05
752	Hunter, Jemima	36 22

		General Taxes.
777	Halloren, Thos.	3 40
778	Hart, A.	33 15
795	Hacker, W. H.	51 08
799	Hudson, J. H.	10 20
837	Jamieson, J. M.	35 70
867	Kelman, J. L.	87 60
869	King, Alfred	35 74
892	Lucas, A. J.	27 20
899	Lamb, George	63 75
	James, Harry	20 40
921	Lavery, J. J.	3 40
928	Lowes, Sep.	5 10
930	Letherby, Jas. A.	41 48
943	Lamb, J. C.	4 25
944	Letherby, John A.	50 98
961	Murphy, Ella	20 60
966	Melia, A. J.	12 68
1017	Merdey, E.	22 10
1041	Martin, H. C.	3 40
1042	Miron, Mrs. L.	10 20
1043	Masters, J. W.	16 15
1098	Crombie, Chas.	10 20
1136	McClinchy, Wm.	68 63
	McBride, D.	25 50
1166	Cohen, M.	6 80
	McMann, Thos.	22 10
	McIlroy, A. E.	17 00
1187	McDonald, Sarah	7 48
1170	McLean, Hector	72 46
1253	Newberry, W. H.	37 40
1322	Ing Bros.	8 50
1332	Pratt, John	46 55
1357	Midland Business College	6 80
288	Ramsden, G. A.	8 50
1419	Ralph, R.	43 35
1425	Robitaille, A.	114 73
1427	Brewster, James	5 10
1431	Osborne, G. R.	6 80
1412	Roberts, M.	11 22
1775	Wilson, R. J.	10 20
470	Watt, John	15 30
1477	Sheehan, Mary	52
	Smith, Geo. H.	20 60
	Shakitton, Wm.	29 24
1500	Silvey, J.	23 12
750	Shanacy, H.	17 16
	Simpson, Jas.	8 50
1535	Smith, Waverley	3 40
1550	Steers, O.	5 95
	Speers, Jno.	40 49
1564	Smith, John	19 36
	Stevenson, J. A.	31 28
	Smith, J. J.	34 00
1604	Toole, N.	11 23
1608	Thayer, G. M.	18 23
391	Trembley, H.	15 30
1656	Vyvyan, S.	62 38
1661	Vanluven, Wm.	10 20
	Van Luven, A.	6 12
1705	White, R. F.	65 25
1708	White, John	8 42
1722	Doogan, L.	6 80
1740	Watson, G.	21 42
1758	Wiles, John	14 45
1762	Wannamaker, Mrs.	3 40
1765	White, Julian	3 60
		$3,191 45

Schedule F.

1917 Taxes Outstanding as at 31st March, 1918.

Roll No.	Name.	General Taxes.
	Atkinson, Jos.	$11 10
	Arbour, Ed.	48 95
	Archer, Fred.	69 98
	Allen, Jesse	88 80
	Adams, Wm.	29 60
	Adams, Jno.	7 40
	Doyle, G. F.	3 70
	Belfrey, Sher.	42 15
	Baker, Annie	64 38
	Bates, Robt.	18 27
	Barnett, Hy.	21 88
	Baldwin, J. A.	28 49
	Bald, J. W.	33 76
	Baldwin, Catherine	48 10
	Brown, Norman	7 40
	Barnes, Jno.	23 78
	Baker, A. J.	46 60
	Bell, W. G.	13 32
	Brown, Ernest	11 10
	Beaudoin, O.	8 14
	Barker, Clar.	3 70
	Brown, Samuel,	49 95
	Brault, Fred.	5 55
	Blythe, Ella	48 83
	Boland, W.	5 55
	Bowie, Don	9 25
	Bennett, W. H.	41 81
	McLean, H. A.	14 80
	Kollymer, E.	13 32
	Chew, Fred.	6 10
	McGirr, Andrew	3 70
	Chase, G.	79 55
	Carmichael, Thos.	27 75
	Copeland, Jno.	22 20
	Callaghan, Jos.	16 28
	Curtis, Wm.	38 85
	Clark, Art.	54 00
	Cave, W. G.	209 52
	Cohen, W. G.	52 54
	Courtney, Sarah	24 05
	Jay, E.	3 70
	Wray, D. H.	22 20
	Coleman, F. H.	31 45
	Clark, Hy.	5 55
	Calder, L. A.	44 40
	Cunningham, Wm.	113 64
	Cadeau, Oliver	5 55
	Caswell, Lilian	6 48
	Clegg, Jas.	29 00
	Cadieux, Min.	7 03
	Corley, Mrs. E. L.	25 90
	Camerson, Neil	68 68
	Chalk, David	31 45
	Courtney, Roy	37 00
	Chew, Ella	196 80
	Dunn, Jos.	96 04
	Denure, Mob.	54 02
	Davenport, Joe	105 08
	Demorest, J. W.	251 04
	Doogan, Lorne	14 80
	Davenport, Jos.	94 35
	Davis, Mrs. W. J.	9 25
	Kinch, W. H.	7 40

	General Taxes.
Tenis, Cote	7 40
Dunn, J. L.	26 75
Devitt, Thos.	176 63
Delamater, Hor.	5 55
Davis, Jane, Est.	3 70
Dupuis, Thos.	11 10
Densmore, Wm.	7 40
Doherty, Jos.	49 95
Delorno, Jos.	5 55
English, W. W.	42 07
McEachern, T.	3 70
Eastwood, Jno.	3 70
Elliott Estate	6 77
English, Ly	20 35
Foster, Jno.	70 30
Fell, Oscar	37 00
Farnworth, Hy.	68 45
Fusee, Chas.	42 46
Froats, M.	13 30
Fyfe, Ken.	55 50
Fell, J. W.	18 50
Furniss, S.	133 62
Carson, R.	15 54
Brisbin, F.	15 54
Sing, Soo	11 10
Fike, Jno.	15 73
Free Methodist	25 45
Griffin, Rose	7 40
Gray, Jos., Jr.	37 00
Grey, Jos.	29 34
Graham, Robt.	17 58
Gudewill, C. E.	133 20
Griffith, A. H.	33 56
Gregory, L. G.	12 03
Letherdale, W. B.	18 50
Palmer, Karl	16 65
Gladstone, Francis	45 62
Gladstone, W. R.	462 72
Gravett, My.	31 32
Gerow, Wm.	15 53
Grey, Hy.	11 10
Hamelin, Jos.	40 70
Hart, Nor.	12 22
Hocken, Wm.	25 41
House, A. E.	87 16
Hinds, Mat.	67 48
Hopwood, Chas.	48 86
Hocken, Hy.	51 99
Hamelin, Louis	29 95
Healey, Matt.	24 40
Herbert, F.	75 85
Hutchison, Geo.	44 77
Hart, Jacob	48 84
Haggart, Wm.	123 47
Hunter, Jemima	39 77
Hamelin, Amada	32 38
Haskett, Geo.	22 20
Halloran, Thos.	3 70
Hart, Anthony	36 08
Horne, H. J.	6 48
Harriston, W. A.	6 48
Harper, Eph.	38 85
Hocker, W. H.	54 98
Howard, W.	25 90
Hall, T.	11 10
Irvine, J. K.	4 44
McGill, H. H.	18 50

	General Taxes.
Wilson, H. E.	3 70
Jamieson, J. M.	38 85
Jane, E. B.	45 56
Jennett, R.	44 40
Jamieson, E. F.	4 44
Jennett, Mary	45 14
Kelmon, J. L.	98 50
King, Alf.	38 59
Kerr, G. A.	40 49
Kirk, Amos	26 40
Lucas, A. J.	29 60
Lamb, Geo.	70 30
Levine, Mich.	247 59
Lee, Joe	18 50
Wing, Chas.	14 80
Orenstein, I.	11 10
Lally, Wm.	27 75
Lavery, J. T.	3 70
Lane, Geo.	30 34
Lowes, Sep.	5 55
Letherby, Jno. A.	45 14
Lapp, Wm.	8 14
Lamb, J. C.	4 63
Little, Roland	299 14
Lerose, Emile	33 30
Levigne, Chas.	11 10
Lamb, Silas	27 01
Lucas, Geo.	3 70
Lawndan, Wm.	35 52
Murphy, Ella	44 40
Mitchell, David	34 53
Melville, Jos.	45 68
Moore, J. H.	34 23
Morgan, Thos.	87 97
Masters, Martha	12 95
Mott, Fred.	13 30
Moses, A.	16 33
Nurib, Lena	11 10
Masters, J. M.	17 58
Macksey, J. J.	7 40
Meroy, Arthur	56 43
McWaters, Jos.	224 76
Gill, Jno.	9 25
McCrackern, Robt.	95 05
McCaw, May J.	17 58
McClinchy, W.	73 88
McGill, Geo.	60 27
McMahon, Thos.	24 98
McGill, H. R.	241 84
McElroy, A. E.	18 50
McLean, Duncan	88 68
McKenzie, Jack	8 14
McLean, G. B.	55 50
Fowlie, D. A.	18 50
McNab, Angus	9 25
McKelon, Wm.	12 95
McNeil, Nap.	75 53
McLaughlin, R.	128 68
Midland Garage	12 95
McGregor, Jas.	76 92
McKee, Jno.	37 00
McLean, A.	22 20
Moore, A.	4 44
McCaw, Francis	14 80
Neylon, M.	46 62
Nolan, W.	55 50
Noble, Jas.	35 15

	General Taxes.
Lee, Ling	18 50
Nickerson, Chas.	10 65
O'Connor, May	19 16
Osbroen, A.	47 18
Peters, Mrs. Wm.	50 74
Parkhill, Ida	105 20
Park, Jno. A.	28 86
Pratt, Jno.	50 30
Patchell, Emma	44 40
Patchell, D. A.	131 17
Payne, Thos.	55 50
Preston, Jos.	19 43
Playfair Preston Co.	1,243 97
Panton, Hy.	44 08
Rutherford, F.	33 30
Rankin, Jos.	27 75
Towne, D. W.	33 30
Roberts, Thos.	33 30
Roberts, Milton	16 65
Ralph, Reuben	48 10
Robitaille, A.	125 48
Melville, W. J.	5 55
Raikes, R.	304 71
Osborne, G. R.	3 70
Toole & Travers	5 55
Rich, Emma	25 60
Spooner, Wm.	42 23
Somers, Nap.	32 38
Shuhan, May	28 16
Scott, Jas.	37 00
Shakelton, Alb.	27 47
Sutherland, J. W.	52 77
Silvey, Jno.	25 90
Sloan, Alb.	57 35
Scott, W. A.	51 80
Sargeant, Hy.	28 79
Smith, Alb.	26 65
Smith, W.	3 70
Ryder, Jno.	18 50
Smith, Jno.	21 88
Sutton, M. T.	35 15
Staman, Alex.	49 95
Sykes, Walter	7 40
Toole, Norman	50 50
Thayer, G.	33 30
Tully, E. B.	24 83
Taylor, Chas.	35 15
Thornton, Wm.	18 11
True, Thos.	51 80
Thompson, G. L.	14 80
Taylor, O.	17 77
Wadge, T. J.	37 37
Warner, A. C.	42 55
Webber, Robt.	181 50
Willett, B. R., Est.	24 05
White, R. F.	74 35
White, N.	84 78
Weston, M. E.	118 65
Thompson, Jos.	41 63
Wagg, Elizabeth	47 18
Wilcox, Wm.	37 00
Wilson, Hugh S.	18 50
Wannamaker, Mrs.	3 70
Webster, Clif.	16 65
Westwood, Mrs. H.	10 18
White, Chas.	11 10
Watson, G.	3 70

	General Taxes.
Webster, J.	11 10
Yates, Hy.	27 20
Ingram, M.	31 76
Loney, A.	4 74
Phillips, E.	8 53
	$12,687 12

DOLLARTOWN.

Schedule F.

1913 TAXES OUTSTANDING AS AT 31ST MARCH, 1918.

Roll No.	Name.	General Taxes.
1616	Chew, N.	$8 35
22	Carr, Jno.	2 37
1747	Masters, J. W.	3 79
		$14 51

1914 TAXES OUTSTANDING AS AT 31ST MARCH, 1918.

Roll No.	Name.	General Taxes.
1658	Chew, Norman	$8 35
1681	Dempsey, Peter	7 48
1692	Edwards, Jas.	11 22
725	Hollaren, Thos.	6 12
1747	Haste, Jessie	2 26
942	McCartney, H. E.	10 07
1891	Wilson, R. J.	7 12
		$52 62

1915 TAXES OUTSTANDING AS AT 31ST MARCH, 1918.

Roll No.	Name.	General Taxes.
1733	Belfrey, J. H.	$9 98
1728	Armstrong, J. H.	85
312	Calcott, Wm.	3 06
1745	Curry, J.	63
1765	Chew, Norman	8 85
1766	Campbell, Fred.	83
1767	Cowie, John	50
1768	Crow, Art.	30
285	Copeland, A. C.	4 63
1775	Dempsey, Dan	30
1777	Dion, A.	85
440	Dwinle, Mrs. Jno.	2 47
1781	Deshane, Geo.	30
1783	Dyment, S.	19 07
1786	Emond, Jas.	60
1787	Evans, A.	30
1815	Hare, Jno.	55
759	Halloran, T.	6 67
1816	Hubert, Mrs. E.	33
1820	Howard, Jno.	50
709	Hart, Jno.	1 50
1821	Hutchins, Sarah	2 05
1826	Hubert, C.	33
100	Hannah, Geo. F.	10
1855	Johnston, W. J.	45
1865	Latour, Jas.	40
1886	Mitchell, A.	14 33
966	Merkley, G. E.	55
1212	McKie, Jno.	23
1902	Pearcy, W.	40

		General Taxes.
1952	Taylor, E. E.	55
1953	Trimblay, P.	10 82
1955	Varty, H.	50
1967	Wilson, R. J.	7 12
.259	Wallace, Wm.	1 23
1186	McThurtry	1 82
		$103 95

DOLLARTOWN.

Schedule F.

1916 TAXES OUTSTANDING AS AT 31ST MARCH, 1918.

Roll No.	Name.	General Taxes.
1797	Armstrong, J. H.	$14 50
312	Calcutt Estate	3 06
1830	Chew, Norman	8 85
440	Dwinell, Mrs. Jno.	2 57
581	Grierson, H.	15
602	Chew Estate	27 30
1869	Alper, A.	6 80
875	Halloren	6 67
1887	Hubert, C.	6 79
1902	Johnston, J.	8 35
1923	Latour, J. H.	6 88
1938	Laundre, C. D.	4 32
1940	Lees, W.	4 09
2001	Shakleton, H.	6 41
2013	Wilson, W.	20 17
2024	Wilson, R. J.	7 67
1784	Yates, Henry	6 05
		$140 63

1917 TAXES OUTSTANDING AS AT 31ST MARCH, 1918.

Roll No.	Name.	General Taxes.
	Argue, Minnie	$10 82
	Armstrong, J. H.	2 50
	Belfrey, J. H.	10 73
	Battrick, F. C.	3 94
	Calcott Estate	3 06
	Coulter, E.	10 24
	Lawson, Alex.	3 40
	Chew, Norman	8 85
	Copeland, A. E.	4 63
	Dempsey, Ben.	5 41
	Dwinnell, Mrs. Jno.	2 57
	Dupuis, Eli	5 41
	Elliott, J. J.	2 57
	Fowlie, Melville	24
	Fox, Henry	8 99
	Grey, Septimus	15 61
	Gould, E. C.	3 21
	Grey, Mrs. E. J.	5 12
	Grey, S.	8 35
	Halloran, Thos.	6 67
	Hannah, Geo. F.	2 57
	Johnston, Jas.	8 35
	Lapp, Wm.	5 41
	Latour, J. H.	6 88
	Laundrie, W. D.	4 32
	Miller, Herb.	17 70
	Mitchell, Archie	15 23
	Peters, Mrs. Wm.	46 62

	General Taxes.
Scott, W. A.	15 36
Smith, Jno.	11 82
Shakleton, R.	6 41
Swanson, Don.	2 19
Tyrrell, Mike	2 22
Wilson, Wm.	20 17
Wilson, R. J.	7 67
Wilcox, Hiram	11 24
Scarlett, Mrs.	40
	$306 88

Schedule G.

TAXES PAID TO TREASURER, WHICH WERE NOT ENTERED IN CASH BOOK NOR MARKED OFF COLLECTORS' ROLLS. (RECEIPTS ON FILE IN OFFICE OF TOWN CLERK.)

Year.	Roll No.	Name.	Date of Receipt.	Total Amount.
1917	1302	Battrick, F. C.	Jan. 3, 1918	$4 14
		Beaudoin, O.	Nov. 22, 1917	8 59
1917	156	Blythe, Ellen	Oct. 19, 1917	48 83
1914		Cormichael, T.	Aug. 8, 1914	15 00
1917	219	Cormichael, T.	Nov. 13, 1917	29 14
1917	538	Fyfe, K.	Oct. 22, 1917	55 50
1917	534	Froats, M.	Nov. 10, 1917	13 30
1917	972	Lavigne, Chas.	Oct. 22, 1917	11 10
1917	1817	Westwood, H.	Oct. 22, 1917	10 18
1917	433	Davis, W. J.	Nov. 5, 1917	9 25
1917	149	Breault, F.	Nov. 13, 1917	5 55
				$210 58

Schedule G.

TAXES PAID TO TREASURER, WHICH WERE NOT ENTERED IN CASH BOOK NOR MARKED OFF COLLECTORS' ROLLS. (STUBS OF RECEIPTS ON FILE IN OFFICE OF TOWN CLERK.)

Year.	Roll No.	Name.	Date of Receipt.	Total Amount.
1917	1996	Mitchell, A.	Jan. 9, 1918	$15 99
1917	1911	Gray, Sep.	Jan. 4, 1918	8 77
1917	1904	Fox, H.		9 44
1917	1782½	Thompson, J.		43 71
1917	1657	Tully, E. B.		26 07
1917	1500	Spooner, W.		44 34
1917	1278	Neylan, M.		45 69
1917	823	Lamb, Silas	Dec. 13, 1917	28 36
1917	810	Harper, E.	Dec. 14, 1917	40 79
1917	807	Harrison, W. A.		6 81
1917	759	Hoggart, J. W.	Dec. 13, 1917	129 64
1917	451	Delamater, J.		5 83
1917	411	Demorest, J. W.	Dec. 17, 1917	263 59
1917	343	Corley, E. L.		27 20
1916	1174	McElroy, A. E.	Oct. 21, 1916	17 00
1916	1481	Smith, G. H.		20 60
1916	1160	McMahon, T.		22 10
1916	1553	Spier, J.		40 49
1916	1139	McBride, D.		25 50
1916	1556	Stevenson, J. A.		31 28
1916	382	James, H.		20 40
1916	1486	Snakelton, W.		29 24
1916	211	Corrigan, D.		28 05
1916	589	German, F.		26 77
1916	716	Hill, Ira	Nov. 3, 1917	70 55
1916	664	Hicks, Hy.	Feb. 6, 1917	65 15
1916	339	Carley, J. J.		22 78
1916	1557	Smith, J. J.		34 00
1916	327	Cowdrey, G.		47 71

Year.	Roll No.	Name.	Date of Receipt.	Total Amount.
1916	697	Hamelin, A. W.		38 49
1916	966	Melia, A. J.		13 94
1916	65	Baker, Annie		8 77
1916	413	Doherty, E.		8 62
1916	1656	Vyvyan, S.		68 62
1916	1332	Pratt, J.		51 20
1916	309	Church, M.		29 92
1916	869	King, A.		38 97
1916	570	Shanacy, H.		18 87
1916	732	Hunter, J.		39 84
1915	1559	Turner, D. J.		88 20
1916	2023	Wilson, W.		22 17
1916	68	Barnett, H.	July 5, 1917	22 41
1917	26	Adams, W.		32 01
1916	....	Gladstone, H. E.		10 20
1916	....	Noble, I.		10 00
1916	....	Byers, Mrs. J.		96
1916	....	Peters, W., Est.		90
1916	....	Wiles, J.		15 89
				$1,717 83

Schedule G.

TAXES PAID TO TREASURER, WHICH WERE NOT ENTERED IN CASH BOOK NOR MARKED OFF COLLECTORS' ROLLS. (RECEIPTS SUBMITTED TO PRESENT CLERK BUT NOT RETAINED BY HIM.)

Year.	Roll No.	Name.	Date of Receipt.	Total Amount.
		Devitt, T.		$173 05
1917	....	Barnett, Hy.	Nov. 7, 1917	22 97
1917	....	Baker, A. J.	Oct. 22, 1917	46 55
1917	....	Bates, R.	Oct. 22, 1917	18 27
1915	....	Curry, J.	Sep. 10, 1917	63
1912	....	Cowdrey, G.	Oct. 21, 1913	26 46
1917	....	Cote, Tenis	Nov. 6, 1917	7 77
1917	232	Cartis, Wm.	Oct. 22, 1917	38 85
1917	....	Copeland, J.	Oct. 22, 1917	22 20
1917	....	Clarke, Art.	Oct. 22, 1917	54 00
1917	....	Chew, Fred.		6 41
1914	....	Carr, Isabella	Aug. 21, 1914	8 18
1917	....	Delorme, Jos.	Oct., 1917	5 55
1915	....	Evans, Arthur	Jan. 11, 1916	30
		Frazer, M., Est.		182 28
1917	....	Free Methodist Church	Oct. 22, 1917	25 45
1915	....	McEacharn, F.		3 00
1917	....	Gray, Jos., Jr.	Oct. 20, 1917	37 00
1913	....	Hebert, F.	July 31, 1917	3
1915	....	Hebert, F.	July 31, 1917	15 00
1917	....	Hart, Jacob	Oct. 22, 1917	48 84
1915	....	Hutchings, Sarah		2 05
1917	....	Hamelin, Jos.	Oct. 27, 1917	40 70
1917	....	Kollmyer, E. E.	Sep. 22, 1917	13 05
1917	....	Kirk, Amos	Oct. 20, 1917	26 40
1917	....	Lung, Lee	Oct. 22, 1917	18 50
1917	....	Lally, Wm.	Oct. 20, 1917	27 75
1913	....	Melia, A. J.	Oct. 21, 1913	36 08
1917	....	McElroy, A. E.	Oct. 11, 1917	18 50
1917	....	Mitchell, B.	Jan. 15, 1918	41 26
1917	....	McMahon, T.	Oct. 20, 1917	24 98
1917	....	McGill, G.	Oct. 22, 1917	60 27
1917	....	McEacharn, T.	Oct. 22, 1917	3 70
1914	....	Piggott, E. H.		28 11
1913	....	Silverthorne, J.	Jan. 8, 1914	25 87
1917	....	Somers, Nap.	Oct. 25, 1917	32 38
1917	....	Staiman, Alex.	Oct. 22, 1917	49 95

Year.	Roll No.	Name.	Date of Receipt.	Total Amount.
1917	....	Smith, Albert	Oct. 29, 1917	26 65
1912	....	Terry, T. W.	Aug. 23, 1913	4 50
1917	....	Wilson, H. E.	Oct. 19, 1917	3 70
1917	....	Webster, Clif.	Oct. 22, 1917	16 65
1916	....	Brighty, G.	Oct. 20, 1916	48 60
1917	....	Phillips, Jos., Est.	Oct. 24, 1917	8 53
1917	....	McLean, D.	Oct. 19, 1917	88 68
1917	....	Jennett, Mrs. W.	Oct. 22, 1917	45 14
1917	....	Gill, J.	Oct. 22, 1917	9 25
		Adams, W.		18 37
				$1,462 41

Schedule L.

DEEDS AND BONDS ON FILE IN TOWN CLERK'S OFFICE, 31ST MARCH, 1918.

		Property.	Name.	Date.
Bond....	$5,000 00	Furnace Property	The Guarantee of North America	18 June, 1917
Bond....	5,000 00	Ex. Town Treasurer..	Employers' Liability Corporation	11 July, 1913
Grant.....		King St. Water Lot...	Crown	12 Dec., 1892
Deed.....		Fire Hall		23 May, 1892
Deed.....		Regent St. School		5 Apr., 1915
Deed.....		Public Library Site...		9 Mar., 1914
Deed.....		Fraser Park		21 July, 1906
Deed.....		Fraser Park Entrance		19 Aug., 1914
Deed.....		Fire Hall Extension ..		1 Feb., 1914
Deed.....		Malleable Iron Site...		26 Nov., 1913
Deed.....		Malleable Iron Site...		16 Jan., 1915

Deed required for Garbage Dumping Ground.
Subject to our Report dated 3rd September, 1918.

CORPORATION OF THE TOWN OF MIDLAND.

Schedule H.

CASH BALANCE SHEETS FOR YEARS 1913-4-5-6-7 AND OPENING BALANCE SHEET, 1 JANUARY, 1913.

	1st Jan., 1913.	31st Dec., 1913.	31st Dec., 1914.	31st Dec., 1915.	31st Dec., 1916.	31st Dec., 1917.
AVAILABLE ASSETS.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Cash in hands of Treasurer	274 38	49 80	.....	4 70	27 43	1,589 00
Cash in bank	967 45	495 86	.....	9,182 49	3,485 71	558 26
Tax Arrears 1910, General	.....	149 96	61 21	57 46	57 46	57 46
1911	749 23	215 04	78 22	73 67	73 67	55 14
1912	6,134 15	1,237 17	846 65	706 22	690 80	640 68
1913	.....	10,560 30	3,732 96	2,656 76	2,452 31	905 10
1914	.....	.....	22,229 03	6,089 78	2,949 78	1,082 95
1915	.....	.....	.....	19,415 36	4,738 86	1,835 52
1916	.....	.....	.....	.....	17,290 49	3,559 96
1917	.....	.....	.....	.....	.....	13,719 88
1913 Dollartown	.....	129 29	50 96	31 39	19 62	14 51
1914	.....	.....	460 39	137 62	68 69	52 62
1915	.....	.....	.....	608 76	179 98	103 95
1916	.....	.....	.....	.....	416 72	140 63
1917	.....	.....	.....	.....	.....	352 51
Tax percentages	.....	268 62	2,143 96	2,601 35	3,912 89	3,284 11
Water and Light Commission, Town of Midland	4,434 90	147 06	2,885 21	5,401 05	764 01	545 87
Benson & Bray, Limited, due on loan	.....	.....	2,006 06	4,232 78	6,306 24	.....
Township of Tay, school levy	.....	.....	329 37	.....	445 83	678 49
Province of Ontario, railway grant	.....	.....	227 04	431 28	200 00	.....
Town Treasurer, fire brigade grant, not deposited	.....	300 00	300 00	300 00	300 00	300 00
Sewer construction, payments in advance of debenture issue	21,900 00	14,458 07	.....	.....	.....	.....
Military grants, payments in advance of debenture issue	.....	.....	.....	.....	.....	10,000 00
Debentures discount, unamortized	.....	616 47	1,139 19	.....	.....	.....
Cash deficit	4,550 52	15,444 22	27,787 01	40,794 81	9,671 37	11,105 34
Total	39,010 63	44,071 86	64,277 26	92,725 48	54,051 86	50,581 98

CORPORATION OF THE TOWN OF MIDLAND.

Schedule H.—Continued.

—	1st Jan., 1913	31st Dec., 1913	31st Dec., 1914	31st Dec., 1915	31st Dec. 1916	31st Dec., 1917
IMMEDIATE LIABILITIES.						
Cash overdeposited	.....	.....	158 58	.....	.....	.....
Bank overdraft	6,913 02	7,991 07	4,844 18	.....	.....	.....
Bank loans	21,900 00	21,900 00	40,000 00	40,000 00	30,000 00	10,000 00
Accounts payable, estimated	144 23	500 00	1,100 00	800 00	800 00	800 00
Water and Light Commission, Town of Midland	.....	.....	.....	4,989 00	.....	5,000 00
Corporation of the County of Simcoe, Levy unpaid	5,131 77	5,481 86	5,599 01	12,230 54	11,213 01	18,410 24
High School Board, balance of levy unpaid	.....	103 34	698 54	987 38	1,101 56	3,209 91
Public School Board, balance of levy unpaid	.....	3,467 65	5,629 33	5,715 82	6,217 29	6,962 60
Debentures principal, overdue	1,276 22	1,518 73	907 18	5,190 51	1,951 52	2,816 66
Debentures interest, overdue	3,645 39	3,109 21	5,340 44	8,976 71	2,305 89	3,113 27
Sundry ratepayers, taxes overpaid	.....	.....	.....	.....	173 73	.....
Debentures premiums, unamortized	.....	.....	.....	1 53	288 86	269 30
Debenture monies, on hand for construction	.....	.....	.....	13,833 99	.....	.....
Totals	39,010 63	44,071 86	64,277 26	92,725 48	54,051 86	50,581 98

Subject to our report dated 3 September, 1918.

CORPORATION OF THE TOWN OF MIDLAND.

Schedule I.

INVESTMENT BALANCE SHEET, FOR YEARS ENDED 31 DECEMBER, 1913-4-5-6-7.

—	31st Dec., 1913.	31st Dec., 1914.	31st Dec., 1915.	31st Dec., 1916.	31st Dec., 1917.
PERMANENT ASSETS.	$ c.	$ c.	$ c.	$ c.	$ c.
1. Water and Light Systems, cost of construction	179,017 12	179,017 12	179,017 12	192,156 94	193,779 74
2. Sewer System, cost of construction	71,440 00	85,898 07	85,898 07	85,898 07	85,898 07
3. Sidewalks, cost of construction	50,000 00	50,000 00	50,000 00	50,000 00	50,000 00
4. Parks, purchase price	20,000 00	20,000 00	20,031 00	20,031 00	21,273 50
5. Malleable Iron Site, purchase price	3,430 00	3,430 00	3,430 00	4,782 54	4,757 54
6. Garbage Dumping Ground, purchase price	100 00	100 00	100 00	100 00	100 00
7 Grand Trunk Land, purchase price	.....	.....	.....	.....	1,910 00
8 Public Library Site, purchase price	.....	1,500 00	1,500 00	1,500 00	1,500 00
9. Fire Hall, purchase price	5,250 00	6,450 00	6,450 00	6,450 00	6,450 00
10. High School, cost of construction	23,000 00	23,000 00	23,000 00	23,000 00	23,000 00
11. Public Schools, cost of construction	81,800 00	81,800 00	107,966 01	116,966 01	116,966 01
12. Fire Equipment, purchase price	3,000 00	3,000 00	3,000 00	3,000 00	3,000 00
13. Town Equipment, purchase price	650 00	650 00	650 00	650 00	650 00
14. Town Machinery, purchase price	3,550 00	3,550 00	3,550 00	3,550 00	3,550 00
DEFERRED ASSETS.					
15. Debenture monies, unexpended	.....	.....	13,833 99	.....	.....
16. Benson & Bray, Limited, loan	24,243 94	23,450 07	22,616 51	21,741 27	20,822 27
Totals	465,481 06	481,845 26	521,042 70	529,825 83	533,657 13

Subject to our letter dated 3 September, 1918.

CORPORATION OF THE TOWN OF MIDLAND.

Schedule I.—Continued.

INVESTMENT BALANCE SHEET, FOR YEARS ENDED 31 DECEMBER, 1913-4-5-6-7.

	By-Law No.	Final Date.	31st Dec., 1913.	31st Dec., 1914.	31st Dec., 1915.	31st Dec., 1916.	31st Dec., 1917.
DEBENTURE LIABILITIES.			$ c.	$ c.	$ c.	$ c.	$ c.
Debentures. Water and light construction	479	1940	50,512 59	49,501 68	48,450 34	47,356 94	46,219 81
	517	1932	7,595 42	7,320 94	7,035 48	6,738 60	6,429 84
	532	1933	15,972 16	15,462 33	14,930 41	14,374 45	13,793 47
	548	1933	6,288 59	6,084 95	5,872 14	5,649 76	5,417 37
	669	1918	6,728 24	5,510 60	4,232 08	2,889 64	1,480 06
	718	1939	7,013 48	6,876 27	6,732 20	6,580 93	6,422 10
	772	1932	12,194 04	11,760 59	11,305 46	10,827 59	10,325 81
	787	1941	6,299 44	6,191 58	6,078 32	5,959 40	5,834 54
	851–864	1943	14,999 99	14,774 24	14,537 20	14,288 31	14,026 98
	918–929	1946	.....	.....	.....	13,000 44	12,820 65
Sub Totals	.....	.....	127,603 95	123,483 18	119,173 63	127,666 06	122,770 63
Debentures. Sewers construction	567–1	1944	10,788 91	10,622 30	10,448 19	10,266 24	10,076 11
	567–2	1945	5,474 19	5,394 47	5,311 16	5,224 10	5,133 13
	567–3	1946	4,625 41	4,561 84	4,495 41	4,425 99	4,353 45
	609	1945	19,096 59	18,818 63	18,528 17	18,224 63	17,907 43
	618	1921	3,374 45	2,953 65	2,513 91	2,054 39	1,574 19
	764	1939	2,010 23	1,964 70	1,920 55	1,874 19	1,825 52
	783	1941	6,667 86	6,545 90	6,417 83	6,283 36	6,142 16
	855	1942	.....	14,380 13	14,152 72	13,912 79	13,659 67
Sub Totals	.....	.....	52,037 64	65,241 62	63,787 94	62,265 69	60,671 66
Debentures. Sidewalks construction	619	1935	26,056 62	25,387 42	24,688 11	23,957 33	23,193 66
	713	1929	10,435 83	9,994 71	9,531 53	9,045 20	8,534 55
	791	1942	7,879 59	7,753 16	7,620 41	7,481 01	7,334 66
Sub Totals	.....	.....	44,372 04	43,135 29	41,840 05	40,483 54	39,062 87

Debentures.	Parks purchase	626	1916	3,929 46	2,658 16	1,348 72	.....	.....
	Fire hall purchase	320	1915	596 82	305 69	.....	.....	.....
	Public library site	877	1919	.....	.....	1,228 54	943 51	644 22
	Sub Totals	.....	.....	4,526 28	2,963 85	2,577 26	943 51	644 22
Debentures.	High School construction	573	1934	8,129 37	7,885 78	7,631 22	7,365 21	7,087 23
		602	1935	4,231 27	4,114 71	3,992 91	3,865 63	3,732 63
	Sub Totals	.....	.....	12,360 64	12,000 49	11,624 13	11,230 84	10,819 86
Debentures.	Public schools construction	446	1930	2,820 99	2,700 88	2,575 71	2,444 28	2,306 28
		662	1937	24,235 77	23,691 17	23,119 34	22,518 92	21,888 48
		690	1933	3,536 90	3,429 93	3,317 62	3,199 69	3,075 87
		752	1941	19,867 25	19,527 07	19,169 88	18,794 83	18,401 03
		753	1931	1,535 10	1,475 59	1,415 93	1,350 31	1,281 41
		871	1915	5,000 09	5,000 00	.....	.....	.....
		908	1945	.....	.....	40,000 00	39,447 78	38,865 19
	Sub Totals	.....	.....	56,996 01	55,824 64	89,598 48	87,755 81	85,818 26
Debentures.	Benson & Bray, Ltd., loan	812	1932	24,243 94	23,450 07	22,616 51	21,741 27	20,822 27
	Elevator bonus	360	1927	16,097 94	15,276 55	14,414 10	13,508 53	12,557 68
	Smelter bonus	410	1939	41,251 46	40,375 35	39,464 19	38,516 59	37,531 08
	Harbor dock bonus	518	1932	7,595 42	7,320 94	7,035 48	6,738 60	6,429 84
	Hospital bonus	584	1915	117 01	.....	.....	.....	.....
	Sub Totals	.....	.....	89,305 77	86,422 91	83,530 28	80,504 99	77,340 87
Debentures.	Current indebtedness	589	1935	8,462 48	8,229 37	7,985 78	7,731 22	7,465 21
		680	1928	7,371 08	7,029 49	6,670 82	6,294 21	5,898 77
		719	1936	.....	.....	.....	25,000 00	24,283 02
	Sub Totals	.....	.....	15,833 56	15,258 86	14,656 60	39,025 43	37,647 00
Ratepayers' investment to date		.....	.....	62,445 17	77,514 42	94,254 33	79,949 96	98,881 76
	Totals	.....	.....	465,481 06	481,845 26	521,042 70	529,825 83	533,657 13

Subject to our report dated 3 September, 1918.

CORPORATION OF THE TOWN OF MIDLAND.

Schedule J.

CASH STATEMENTS FOR YEARS ENDED 31 DECEMBER, 1913-4-5-6-7 AND 3 MONTHS TO 31 DECEMBER, 1918.

—	31st Dec., 1913.	31st Dec., 1914.	31st Dec., 1915.	31st Dec., 1916.	31st Dec., 1917.	31st March, 1918.
CASH RECEIPTS.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1910 Taxes, General	52 76	2 25	3 94	.....	.....	18 97
1911 Taxes, General	331 47	61 96	4 78	.....	15 11	20 02
1912 Taxes, General	5,054 62	301 27	148 54	16 44	96 39	21 56
1913 Taxes, General	52,325 94	7,149 08	1,145 33	237 16	1,785 21	24 64
1913 Taxes, Dollartown	5,223 78	80 67	20 55	12 12	5 61	.....
1914 Taxes, General	.....	42,758 35	16,749 24	3,414 75	2,113 54	60 00
1914 Taxes, Dollartown	.....	4,701 50	338 30	71 09	16 82	.....
1915 Taxes, General	.....	.....	49,970 37	15,386 36	3,092 27	33 98
1915 Taxes, Dollartown	.....	.....	4,853 68	487 31	44 29	.....
1916 Taxes, General	.....	.....	.....	63,755 74	14,489 15	396 49
1916 Taxes, Dollartown	.....	.....	.....	5,023 69	286 35	.....
1917 Taxes, General	.....	.....	.....	.....	77,178 61	1,770 80
1917 Taxes, Dollartown	.....	.....	.....	.....	5,009 86	47 31
Dog taxes	229 00	211 00	174 50	224 50	402 00	.....
Poll taxes	60 00	206 00	132 50	425 00	430 00	.....
Rents	230 00	70 38	10 00	10 00	10 00	.....
Licenses	1,204 00	1,384 33	1,212 50	1,346 00	1,423 50	185 50
Police court fines	1,107 50	1,626 70	1,254 45	1,574 40	2,028 05	260 00
Poundage	10 00	32 55	4 00	24 60	8 00	.....
Provincial Railway, grant	263 24	.....	.....	431 28	344 28	.....
Franchise, Bell Telephone Co., Ltd.	187 00	.....	.....	.....	.....	.....
Sewer inspections	94 00	32 00	16 00	16 00	8 00	.....
Fire Department	578 15	.....	.....	21 70	.....	.....
Public Works, Dollartown	29 20	.....	.....	.....	.....	.....
Public Works, refunds	558 65	40 35	16 59	151 68	358 00	.....
Salaries and allowances, refunds	126 05	.....	.....	.....	3 00	.....
County roads, grant	950 00	.....	950 00	1,187 00	1,187 00	.....
Bank interest earned	12 12	.....	16 45	347 80	18 80	.....
Sewer tapping	.....	200 00	.....	50 00	.....	.....
Township work	.....	7 00	.....	.....	40 25	1 50

Audit fees from other departments	.....	100 00	.....	200 00	100 00	.....
Printing fees from other departments	.....	18 68	.....	.....	.....	.....
Charity refund	.....	.....	67 07	49 00	.....	.....
Township of Tay	.....	.....	336 37	.....	139 35	.....
Soldiers' insurance, premium	.....	133 76	.....	173 99	5 00	.....
Miscellaneous	4 67	.....	2 00	.....	46 02	.....
Temporary loans	49,050 37	55,000 00	50,000 00	40,000 00	45,000 00	35,000 00
Schools—Grants, Provincial	405 00	487 00	477 00	491 00	18 75	.....
Township of Tay, levies	.....	.....	.....	415 36	.....	507 04
Debentures proceeds	5,000 00	.....	41,097 27	.....	.....	.....
Water and Light Commission, debenture proceeds	14,517 12	.....	.....	13,139 82	.....	.....
Payment of debenture levies	2,597 27	850 79	3,534 26	14,100 23	5,469 00	6,792 40
Sidewalks, debenture proceeds	7,362 27	.....	.....	.....	.....	.....
Sewers, debenture proceeds	.....	14,720 14	.....	.....	.....	.....
Public Library road, debenture proceeds	.....	.....	1,550 00	.....	.....	.....
Floating Debt, debenture proceeds	.....	.....	.....	25,167 07	.....	.....
Midland Dry Dock Bonus, debenture proceeds	.....	.....	.....	.....	.....	23,404 53
Patriotic Grants, debenture proceeds	.....	.....	.....	.....	.....	23,871 15
Benson & Bray, Limited, payment of debenture levies	2,006 06	.....	.....	.....	8,687 52	.....
Malleable Iron Property, smoke stock sold	.....	.....	.....	.....	25 00	.....
Cash on hand and in bank at first	578 81	49 80	.....	4 70	3,513 14	2,147 26
Cash and bank overdraft at last	7,495 21	5,002 76	.....	9,182 49	.....	.....
Total cash receipts	157,644 26	135,228 32	174,085 69	197,138 28	173,397 87	93,963 15

Subject to our report dated 3 September, 1918.

CORPORATION OF THE TOWN OF MIDLAND.

Schedule J.

CASH STATEMENTS FOR YEARS ENDED 31 DECEMBER, 1913-4-5-6-7 AND 3 MONTHS TO 31 DECEMBER, 1918.

	31st Dec., 1913.	31st Dec., 1914.	31st Dec., 1915.	31st Dec., 1916.	31st Dec., 1917.	31st March, 1918.
CASH DISBURSEMENTS.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Salaries and allowances	3,045 61	2,507 40	2,355 00	2,271 00	2,571 80	578 80
Printing, advertising and stationery	1,035 75	398 83	452 99	602 65	504 59	120 20
Insurance	101 62	20 00	33 12	94 95	33 00	187 88
Law costs	425 04	969 81	912 58	957 31	615 46	.....
Fire Department	2,240 96	2,119 70	2,917 57	2,974 29	2,363 48	701 96
Public Works	7,824 19	11,303 65	3,959 65	5,419 21	6,758 51	736 55
Charity	220 91	146 14	164 29	309 17	92 51	144 85
Debenture interest	16,676 84	12,867 49	10,055 39	17,722 13	17,034 23	1,307 27
Bank interest	1,593 86	2,134 91	3,146 45	2,714 35	2,145 63	485 75
Sewers	646 89	139 20	52 32	90 47	795 24	6 00
County rate	5,131 77	5,481 86	5,599 01	12,230 54	11,213 01	18,410 24
Properties and parks	892 51	795 08	442 61	351 15	2,373 57	.....
Board of Health	110 87	86 92	80 85	85 50	164 45	80 45
Administration of Justice	2,646 98	2,887 43	2,684 37	3,021 96	3,914 81	757 88
Public Works, Dollartown	1,053 44	214 36	149 60	2,583 17	333 31	68 40
Public Library Board	900 00	1,010 00	892 54	961 00	990 08	.....
Grants	885 00	695 00	2,188 82	3,415 80	3,299 60	44,850 00
Rents	486 00	275 95	38 50	103 00	180 87	.....
County Roads	983 20	.....	795 13	291 88	1,190 55	.....
Tax refunds	209 72	.....	.....	.....	138 00	.....
License refunds	.....	50 00	100 00	50 00	150 00	.....
Election expenses	.....	74 50	133 81	172 98	128 06	91 36
Dog tags	.....	.....	9 65	6 52	8 78	.....
Town map	.....	.....	439 83	917 45	195 50	.....
Soldiers' insurance, payments	.....	403 88	1,751 63	1,387 66	1,245 24	.....
Miscellaneous	414 63	131 77	28 82	116 30	129 42	23 57
Water and light Commission, service	5,018 00	.....	.....	10,293 46	1,622 80	5,456 58
Total of general cash payments	52,543 79	44,713 88	39,384 53	69,143 90	59,192 59	74,007 74

Cash Payments.						
Temporary loans repaid	43,000 00	38,000 00	50,000 00	50,000 00	60,000 00	.....
Schools—Public School Board, maintenance	19,400 00	20,825 00	24,100 00	23,200 00	26,780 00	7,900 00
High School Board, maintenance	3,800 00	3,450 00	4,000 00	5,325 00	4,750 00	1,600 00
Debenture payments	2,636 98	1,470 92	6,211 98	2,471 48	1,706 12	277 98
Regent Street School construction	5,000 00	.....	26,166 01	9,000 00	.....	.....
Water and Light Commission—Debenture payments	4,316 22	7,701 28	5,805 24	12,872 40	8,116 03	7,243 44
Loans repaid	10,639 98	1,500 00	.....	.....	.....	.....
Debenture monies paid	.....	.....	.....	10,114 78	.....	.....
Land Purchases—Malleable Iron site	3,430 00	.....	.....	1,352 54	.....	.....
Fire Hall site extension	.....	1,200 00	.....	.....	.....	.....
Public Library site	.....	1,500 00	.....	.....	.....	.....
Grand Trunk land	.....	.....	.....	.....	1,910 00	.....
Debentures paid, General	6,577 49	7,372 03	4,227 98	10,145 04	8,795 96	605 34
Benson & Bray, Limited, balance of loan paid	6,250 00	.....	.....	.....	.....	.....
Cash and bank overdrafts at first	.....	7,495 21	5,002 71	.....	.....	.....
Cash and bank balances at last	49 80	.....	9,187 19	3,513 14	2,147 26	2,328 65
Total cash payments	157,644 26	135,228 32	174,085 69	197,138 28	173,397 87	93,963 15

Subject to our report dated 3 September, 1918.

CORPORATION OF THE TOWN OF MIDLAND

Schedule K.

Town Revenue Account, for Years Ended 31 December, 1913-4-5-6 and 1917.

—	31st Dec., 1913.	31st Dec., 1914.	31st Dec., 1915.	31st Dec., 1916.	31st Dec., 1917.
Income.	$ c.	$ c.	$ c.	$ c.	$ c.
Town rate levy, proper	8,007 35	8,451 28	5,568 21	14,629 67	18,637 08
Town rate levy, Dollartown	5,427 73	5,240 49	5,000 95	4,972 91	4,882 22
Licenses	1,204 00	1,334 33	1,112 50	1,296 00	1,273 50
Provincial Railway grant	263 24	227 04	204 24	200 00	144 28
Tax percentage	555 71	2,153 49	1,134 04	2,216 80	859 24
Poll tax	60 00	206 00	132 50	425 00	430 00
Fines	1,107 50	1,615 70	1,254 45	1,574 40	2,028 05
Dog taxes	229 00	211 00	174 50	224 50	402 00
Poundage	10 00	43 55	4 00	24 60	8 00
School levy and war tax, Township of Tay	.....	.....	.....	445 83	360 76
Water and light profits	889 30	2,535 34	1,088 70	.....	.....
Total Income	17,753 83	22,018 22	15,674 09	26,009 71	29,025 13
Expenditure.					
Tax rebates	209 72	.....	.....	.....	.....
Rents	69 00	205 57	28 50	93 00	170 87
Administration of Justice	2,646 98	2,892 43	2,694 02	3,028 48	2,923 59
Dollartown	1,098 90	223 18	149 60	2,583 17	795 24
Salaries and allowances	2,919 56	2,463 22	2,488 81	2,443 98	2,699 86
Printing	1,035 75	398 83	371 55	470 68	369 36
Bank interest	1,581 74	3,234 91	2,909 34	2,299 15	1,751 61
Charity	220 91	146 14	97 22	260 17	92 51
Insurance	101 62	20 00	31 12	94 95	33 00
Law costs	425 04	969 81	912 58	957 31	615 46
Water and light	5,018 00	5,556 42	4,989 00	5,304 46	5,456 58
Board of Health	110 87	86 92	80 85	85 50	164 45
Parks maintenance	892 51	795 08	411 61	351 15	1,131 07
Roads maintenance	7,674 99	10,834 13	3,921 02	4,809 69	6,548 06

Library Board	900 00	1,010 00	892 54	961 00	990 08
Tax discounts	915 12	1,131 49	955 34	1,676 75	1,763 24
Grants	585 00	695 00	2,188 82	3,415 80	11,051 82
County Roads	33 20	.....	.....	.....	.....
Fire Departments	1,662 81	2,119 70	2,917 57	2,952 59	2,363 48
Sundries	351 10	726 77	.....	.....	.....
County rates, short levied	433 23	248 95	624 89	525 42	602 70
Debenture interest, short levied	481 03	925 69	2,224 65	723 17	684 35
Tax adjustments	.....	18 20	.....	.....	.....
Soldiers' Insurance	.....	270 12	1,751 63	1,213 67	1,240 24
Office supplies and expenses	.....	.....	110 26	113 08	115 63
Sewers maintenance	.....	.....	36 32	24 47	325 31
Total Expenditures	20,405 02	34,972 56	30,787 24	31,890 46	40,683 11
Deficit for each year	10,651 19	12,954 34	15,113 15	5,880 75	11,657 98

Subject to our report dated 3 September, 1918.

TOWNSHIP OF HURON PROVINCIAL AUDIT.

REPORT OF SPECIAL INSPECTION, AUDIT AND EXAMINATION OF THE BOOKS, ACCOUNTS, VOUCHERS AND MONEYS OF THE MUNICIPAL CORPORATION OF THE TOWNSHIP OF HURON, IN THE COUNTY OF BRUCE, ONTARIO.

Upon the authority of an Order-in-Council approved by His Honour the Lieutenant-Governor of the Province of Ontario, the 26th day of September, 1918, A. F. Falls, Chartered Accountant, of the City of Chatham, was instructed and employed to make an inspection, examination and audit of the books, accounts, vouchers and moneys of the Municipal Corporation of the Township of Huron, in the County of Bruce, under the provisions of Sec. 10, Chapter 200, R.S.O. 1914.

In pursuance of the said authority and instructions the said A. F. Falls hereby reports that he has made an inspection, examination and audit of the various accounts of the said Corporation. The audit is made upon the petition of certain ratepayers, addressed to the Provincial Municipal Auditor.

The principal items complained about were:

(1) That the Ripley Drain expenditures exceeded the estimate.

(2) That the Telephone System was indebted to the Township.

(3) That Continuation School and Public School funds of the section are not separated.

(4) That the annual audit report is not published and circulated.

(5) That the agreement with the Village of Ripley should be revised so that the village would contribute its fair share towards Board of Health expenditures, etc.

SCOPE OF AUDIT.

The inspection and examination under the authority of the Order-in-Council covers some items in the accounts of the municipality since 1911 and the tax rolls, vouchers and general accounts since 1912 to and including 1917, and such receipts and expenditures in the Treasurer's cash book for 1918 as were necessary to verify the correctness of cash on hand on November 14th, 1918.

Angus Martyn has been Clerk of the Township for nearly thirty years and during the time covered by this report.

Roderick Martyn has been Treasurer of the Township for twenty years and during the period covered by this audit.

As is my custom, any ratepayers who desired to do so were invited to furnish information about any matter about which they desired enquiry to be made, or to make such statements and charges as to them may seem meet respecting the conduct of the municipal affairs of the township.

The points on which enquiry or complaints have been made are mentioned below and will be dealt with in order:

(1) The Ripley Drain. There was good ground for complaint that the township had paid out more money than provided by the by-law. This is referred to fully under the heading of Ripley Drain.

(2) The Telephone System owes the Township as is shown in statements attached and is referred to at length later.

(3) The Continuation and Public School funds have been recorded in separate books, since January 1st, 1915. The receipts and expenditures of the Continuation School are kept and shown separately from those of the Public School each year since 1914, and the cash book of each is audited and the ratepayers given the

fullest information at the annual meeting of School Section 10, Ripley, which comprises the Public and Continuation Schools, each of which has separate grounds and buildings.

(4) This Township has not been in the habit of printing the Auditor's report, but have always kept it in the Clerk's office, where any ratepayer could see it. No orders are issued after the last meeting in December, which is held on the 15th, on which practically all the business for the year is concluded except the receipt of taxes and payment of debentures. The council thought they were not warranted in going to the expense of printing twice practically the same information as contained in Treasurer's Cash Statement to December 15th. I pointed out to the Council that their action did not comply with the law.

(5) Police Village of Ripley. Agreement with Village of Ripley made September 25th, 1914, under which the Village only contributed $115.00 towards the general expenses of the Township, had not been changed. There is a clause in the agreement that it is to continue in force from year to year until a new agreement shall be made between the Village Trustees and the Council of the Township.

All statute labour collected on the roll on Village property is placed to the credit of the Village.

Since the agreement was entered into in 1914 there has been an advance in the cost of everything so that it is the duty of the members of the Township Council to see that a new agreement, in keeping with present conditions, is made.

Assessment and Collector's Rolls.

The Assessment Rolls have been compared with the Collector's Rolls for each year from and including 1912 to 1918 and found to be absolutely correct.

The changes by Court of Revision were very few and indicate that the work of the Assessors was carefully performed.

It is a pleasure to check over Tax Rolls which are so carefully and accurately prepared. The Township is to be congratulated upon having a Clerk who makes such correct Tax Rolls.

That the work of the Collectors has been carefully performed is borne out by the fact that there are practically no arrears of taxes in the County Treasurer's hands.

The Council of 1918 is to be commended for passing a By-law imposing an additional 5 per cent. on all taxes unpaid on December 16th, 1918. This is a progressive step and will very much simplify the finances of the Township as it will be possible to pay the school sections, county rate, debentures, etc., at the proper time without borrowing from the bank or deferring the payment of some of these until the balance of taxes is collected, as has been the experience in the past.

The Collector's settlement of 1917 Tax Roll is as follows:

Dec. 31, 1917	Paid to Township Treasurer to date.....	$40,600 00
	Paid to Township Treasurer in 1918.....	6,024 12
	Returned uncollected	48 01
	Total Roll	$46,672 13

Of the amount $48.01 returned uncollected, $28.09 has been paid to the Treasurer; $2.81 was returned to the County Treasurer against lands, and $17.11 personal taxes is uncollected.

Debentures.

There are no debentures outstanding for which the Township is wholly liable. The only debenture liability is either for Municipal Telephone System for which the subscribers are directly liable, for School Sections for which the ratepayers are liable or for Ontario and West Shore Electric Railway bonds guaranteed by the Township, for which only lands in the Township west of the 25th side-road are liable.

When issuing debentures for Schools or the Telephone System it has been customary to hand the debentures over to the officials of the Section or System who have sold the debentures and placed the proceeds to their bank account, the transactions not appearing in the Township Treasurer's Cash Book at all. The attention of the officials has been called to this and in future they should be sold by the Township, the proceeds deposited to the credit of the Township bank account, and paid over to the proper officials on an order that will give the Treasurer a proper voucher.

Award Drains.

The award drains have been checked for the years from 1912 to and including 1917, all amounts due the Township having been collected on the Tax Rolls or paid in cash to the Treasurer.

Complete records of all transactions in connection with these are kept by the Clerk, except in the case of the McDonald Award, where the Engineer directed that nearly every party to the award was to receive a sum from every other party, and to pay a sum to nearly every other party to the award. In all my experience I never have seen an award drawn up in that way. It does not comply with the form of award contained in the Act.

Schools.

The Secretary-Treasurer of each School Section in the Township was notified to bring or send his books to be checked.

Every section complied with the request and all moneys due from Province, County or Township was found to be entered correctly with one exception, that of S. S. 12.

It was found that W. R. McDonald, then Secretary-Treasurer of the School Section 12, entered in the Cash book of the Section the amounts he drew from the Township Treasurer as follows:

1914—Received $676.00; entered $675.00; short $1.00.
1915—Received $676.45; entered $675.00; short $1.45.
1916—Received $677.45; entered $676.45; short $1.00.

The difference between the amount drawn and that turned over to the Section is $3.45, which sum is due from Mr. McDonald, who was notified on November 12th, 1918, by registered letter at Lucknow, where he now resides, to pay this amount to R. Martyn, Township Treasurer, for the credit of School Section 12.

On November 14, 1918, Mr. McDonald paid $3.45 to the Township Treasurer.

Bonds.

The bonds of Wm. A Reavie, Collector of Taxes for 1918, were examined and found in order. The bond dated October 4, 1918, is for $15,000.00, and besides the Collector is signed by Samuel Brown, Peter Reavie, Edward Reavie and James H. Geddes.

The bond of Roderick Martyn, Treasurer, was examined. It was very old, being dated October 20th, 1906. It is for $15,000.00, and besides the signature of the Treasurer is signed by Angus McDonald, Colin McDonald, John McIver, Angus Martyn, David Martyn and John McDonald.

One of the bondsmen is now dead and a new bond should be procured on that account.

It is customary now in municipalities to procure a bond from a company in place of private bondsmen and the municipality pays the annual premium.

Ripley Drain.

This is the only municipal drain in the Township. It was petitioned for, the Council referring it to the Township Engineer who brought in a report which was acted on by the Court of Revision. The By-law, No. 490, was finally passed January 11th, 1915. On May 10th, 1915, a Council meeting was held at which the Village Trustees were present when the tenders were opened and contracts awarded. At this meeting the class of tile to be used was changed and conditions of report varied by giving contracts for parts of the drain which ran across farms to the owners to perform, they to do the work and be charged the price of 4 or 5 inch glazed tile and pay a stated sum for the same, all the tile to be furnished by the Township and the work to be done on the Village part of the drain by the Contractor for $650.00. The Engineer, I am informed, changed the levels after the contract was let and gave an order on the Township to the Contractor for extra excavation which amounted to $130.00.

The drain is completed and no complaint has been made that it is not doing that for which it was constructed.

Complaint has been made that the Township has paid out more for the drain than it has or can collect on the By-law under which the drain was constructed. There is foundation in the fact for the complaint.

Some of the ratepayers on the drain commuted their assessments before the debentures were sold, some others have commuted since the debentures were sold. Some commuted by doing work and paying the balance in cash. There was some tile left over which the Township used elsewhere valued at $25.00.

The Township contribution, $100.00, as assessed by the Engineer, was not included in the amount for which the debentures were sold, so was practically commuted by the Township.

The Village of Ripley was assessed by the Engineer to contribute $307.40. This amount was not included in the amount for which the debentures were sold, but should have been because it was not commuted by the Village but is being paid with interest at the rate of $72.98 per year for five years, already three of these payments have been made by deducting $72.98 yearly in 1915, 1916 and 1917 from the amounts credited to the Village of Ripley by the Township. $72.98 will be deducted from Ripley in December, 1918, and again in December, 1919, when the amount will be fully paid.

The attached statement of the amounts expended by the Township on the Ripley drain, and the amounts received or to be collected as provided by By-law 490, shows the sum of $169.86 paid out in excess of what was provided for in the By-law.

This amount, together with interest and Clerk's fees for preparing the levies on the Roll of 1919 must be recovered from the ratepayers in the proportion that they are contributing to the drain as contained in Engineer's report in By-law 490 as amended by Court of Revision. The Township's share of the

amending By-law will be the proportion that $100.00 is to $1,683.00 of the total amount to be collected, and the amount each ratepayer is to contribute will be figured in the same way.

It is the duty of the Council to see that an amending By-law is passed.

Cost of Ripley Drain.

1914				
Nov. 23	E. D. Bolton, Eng. Fees	$75 00		
23	G H. Mooney, printing by-law	35 00		
1915				
Jan. 11	Angus Martyn, drawing by-law	30 00		
May 26	G. H. Mooney, printing and advertising *re* drain	4 75		
July 5	John McLean, part payment contract	500 00		
5	R. McDonald, hauling tile	36 00		
5	W. J. Crawford, glazed tile	428 25		
Aug. 9	R. McDonald, hauling tile	52 00		
	E. D. Boulton, balance engineer's fees	88 00		
	John McLean, balance contract	280 00		
	W. W. Irwin, unloading and delivering tile	20 00		
	Wright Bros., tile	229 36		
Sept. 13	John McLean, balance	8 00		
Nov. 15	John McLean, making connections	75		
Dec. 15	Angus Martyn, clerk's fees	25 00		
	Total cash paid out	$1,812 11		
	The following amounts were applied to commute taxes:			
	Work of Robt. McDonald on lot 18, con. 7	$57 70		
	Work of Allan Murray, lot 19, con. 17	56 10		
	Work of Allan McIver, lot 20, con. 7	35 00		
	Total cost of drain	$1,960 91		$1,960 91
	Receipts from Levies, Sale of Debentures, Tile, etc.:			
1915	Debentures sold	$1,109 50		
	Township of Huron as per Engineer's Report	100 00		
	Village of Ripley, as per Engineer's Report	307 40		
	Commuted in cash, Donald McIver	5 25		
	Commuted in cash, Allan Murray	26 90		
	Commuted in cash, Robt. McDonald	26 20		
	Commuted in cash, John McIver	5 00		
	Commuted in cash, Allan McIver	37 00		
	Commuted by work, Allan Murray	56 10		
	Commuted by work, Robt. McDonald	57 70		
	Commuted by work, Allan McIver	35 00		
	Sale of tile left over	25 00		
				$1,791 05
	Amount to be levied by Amending By-law to which must be added interest and clerk's fees.			$169 86

Huron and Kinloss Mutual Telephone System.

This system, which extends over parts of the Townships of Huron, Kinloss and Kincardine, has its central station in the Village of Ripley, Huron being the initiating Township. The system was started in 1911 with a list of 435 subscribers who were to pay for ten years $10.00 a year if on a party line or $12.50 if on a direct line.

The system has been extended till in 1917 there were levies for 599 telephones on the Tax Rolls of the three Townships.

The telephone was a new business to the officials and ratepayers and although addressed at meetings by persons who claimed to know how to conduct the affairs

of a telephone system the results of the early management show that the officials were not wisely informed.

It has been stated that those soliciting subscribers stated that the telephones would cost the subscribers only the annual amount to be levied on the Tax Roll to meet the debentures issued for the construction of the system.

At all subscribers' meetings any attempt to collect for maintenance or operating expenses was resisted. The subscribers' meeting in the early part of 1916 voted down a resolution to collect $1.00 from each subscriber for maintenance.

The subscribers got service from 1911 *to the fall of* 1916 *without payment of any charge for maintenance.*

The system had borrowed from the Township for maintenance but made no provision to repay till the Council of 1916 passed a By-law and levied on the Tax Rolls of 1916 $2.50 for each telephone for maintenance. This was done again in 1917 by the Council collecting $2.50.

At the subscribers' meeting February 13th, 1918, the present Reeve of the Township, G. H. Ruttle, moved, seconded by J. Roulston, "That the rate to be charged and levied for maintenance shall be $5.00 a year per telephone, instead of $2.50 as at present, until said debt is paid off, rental phones included."

There was placed on the 1918 Tax Roll $5.00 for maintenance against each telephone subscriber in addition to the amount levied to meet the debenture payment.

It will be necessary to collect $5.00 for maintenance from each telephone for the year 1919 also, to enable the Commissioner to pay back the money borrowed from the Township for maintenance.

Telephone Construction.

From the printed audit reports of the system which have been approved at the subscribers' meetings covering the period from the commencement of the system in 1911, to December 31, 1917, the amount that was received from the sale of debentures amounted to $47,274.85. The amount expended on construction allowing interest paid before debentures were issued as part of the construction amounted to $40,764.10, the difference is $6,510.75, which was provided by sale of debentures for construction but not expended for that purpose. What has become of that money?

The answer is, it was used to pay the cost of operating by the Commissioners who had the management of the system prior to 1916.

Telephone Operating.

It costs considerable money to operate a telephone system, as will be seen from the following figures from the printed audit reports to December 31st, 1917.

Operating expenses to Dec. 31st, 1917		$17,306 71
Revenue, renters, tolls, etc.	$6,057 07	
Levied 1916 for maintenance	1,455 00	
Levied 1917 for maintenance	1,502 50	
		9,014 57
Cost of operating exceeded funds received for that purpose by		$8,292 14

Where did the money come from to operate the system?

All the amount of construction money not expended on construction was used for operating expenses—$6,510.75; and part of $2,545.00 note—$1,781.39; making the total $8,292.14.

The balance of $2,545.00 note, $763.61, was on hand December 31st, 1917, to meet current liabilities of the system.

Telephone Commissioners.

I had the pleasure of meeting the Commissioners and discussing the financial position of the system with them and informing them of the facts mentioned in this report.

The present Commissioners are not to blame for the conditions that exist, it is those who failed when Commissioners to point out to the subscribers the true conditions and collect for maintenance that must shoulder the blame for the present state of affairs.

Subscribers at an annual meeting or Commissioners have no authority or right to try and amend or alter in any way the conditions of Township By-laws levying for the annual amounts to meet debentures against subscribers. In the minutes resolutions to do this have been passed. the Township officials have to live up to the By-laws and levy for telephones in each case unless the amount has been commuted.

Telephone Debentures.

In some cases subscribers whose names are in the By-laws have never been provided with telephones and have not paid. which creates a shortage to meet the debenture annual payment.

Attached are statements showing amounts due from the system to the Township to make good the shortages each year from 1912 to 1918, and also amount paid over as collected for maintenance in excess of the actual amount on the Tax Rolls of 1916 and 1917.

In December, 1918, before any money is paid over to the system by the Township there must be provided for the Township $6,093.16 to meet debentures due December 20th, 1918, besides $84.80 due for shortages of previous years and $8.00 overpayment 1916 and 1917 maintenance collections. These make a total of $6,185.96. Now whatever telephone money is on the 1918 Tax Rolls of Huron, Kinloss and Kincardine Townships in excess of $6,185.96 can be paid over to the system or applied against the advances from the Township.

In 1919 unless more debentures are issued for the system, $6,093.16 must be received by the Township to meet the debentures due December 20, 1919, and any sum in excess of that on 1919 Tax Rolls can be turned over to the system or applied on the advances if any. In the same manner from year to year the Township must first get the full amount to meet telephone debentures from telephone collections on Tax Rolls, any excess of that amount collected can be turned over to the system.

Kinloss and Kincardine Townships.

The payments for telephone money collected on the Rolls should be paid over to the Treasurer of Huron Township before December 20th each year the date on which the debentures mature, to provide funds to meet these payments promptly.

Kincardine Township owes Huron Township $26.80, being $20.00 and interest since 1912, short remittance of telephone collections. I am informed that two subscribers were dilatory about paying their 1912 taxes and Kincardine Township remitted only for telephones for which the taxes were then paid. They must

pay this amount without further delay and the amount of the annual telephone taxes whether the taxes are collected or not. Unless the amount is paid over before December 20th, each year interest should be charged.

Telephone Borrowings.

The amounts borrowed from the Township was done by the Township passing a By-law to loan the system the amount asked. A note was made out and handed to the officials of the system who placed it to their credit in the bank, none of these transactions being recorded in the Township Treasurer's Cash Book till the latter part of 1917, since which they all appear in his books, and in future the notes will be discounted by the Township through their bank account, and the amount borrowed paid over by an order passed by the Council in the regular way the same as other payments are handled.

Statements.

Attached are statements:

(*a*) Number of subscribers under each By-law in each Township for which collections are made on the Tax Rolls.

(*b*) Debenture liability under each by-law showing number of years to run and total debenture payments each year.

(*c*) Collections and debentures maturing each year 1912 to 1917 with amount due from system for shortages.

(*d*) Overpayment of maintenance collections.

Telephone General Remarks.

It is too bad that no provision for operating expenses was made for the first five years the system has been run as it requires a much heavier annual collection now than would have been necessary if the operating and maintenance charges had been taken care of each year.

Huron and Kinloss Municipal Telephone System.

Huron Township. Including Village of Ripley.

By-law 442, May 31, 1912, subscribers	313
Deduct Don. McLellan, had phone one year and went west	1
	312
By-law 465, Nov. 21, 1913, subscribers	38
By-law 505, Oct. 4, 1915, subscribers	32
	382
Deduct Robert McCosh, phone commuted	1
	381
By-law 535, Dec. 15, 1916, subscribers	12
	393
Deduct Dr. Sinclair, phone now paid for direct, not put on roll after 1915	1
	392

370 at $10.00, and 22 at $12.50.

HURON AND KINLOSS MUNICIPAL TELEPHONE SYSTEM.

Kinloss Township.

By-law 442, May 31, 1912, subscribers	50
By-law 465, Nov. 21, 1912, subscribers	22
	72
Deduct Peter McDonald, after his brother paying for two years for phone put in Don McDonald's on Peter McDonald's subscription, Don McDonald phone on later by-law	1
	71
Deduct Wm. Ryan, had no phone in 1914	1
	70
By-law 505, Oct. 4, 1915, subscribers	16
Add Wm. Ryan, phone put in in 1915	1
	87
By-law 535, Dec. 15, 1916, subscribers	2
Dec. 13, 1917, total subscribers	89

HURON AND KINLOSS MUNICIPAL TELEPHONE SYSTEM.

Kincardine Township.

By-law 442, May 31, 1912, subscribers	72
By-law 465, Nov. 21, 1913, subscribers	34
	106
Deduct, included in No. 465, Geo. Colwell, no phone	1
	105
By-law 505, Oct. 11, 1915, subscribers	8
	113
By-law 535, Dec. 15, 1916, subscribers	5
Dec. 31, 1917, total subscribers	118

HURON AND KINLOSS MUNICIPAL TELEPHONE SYSTEM.

Debenture Liability, Showing Maturity by Years.

	By-law 442	By-law 465	By-law 505	By-law 535
December 20—				
1912	$4,403 16			
1913	4,403 16			
1914	4,403 16	$940 00		
1915	4,403 16	940 00	$560 00	
1916	4,403 16	940 00	560 00	
1917	4,403 16	940 00	560 00	$190 00
1918	4,403 16	940 00	560 00	190 00
1919	4,403 16	940 00	560 00	190 00
1920	4,403 16	940 00	560 00	190 00
1921	4,403 16	940 00	560 00	190 00
1922	.....	940 00	560 00	190 00
1923	.....	940 00	560 00	190 00
1924	.....	.....	560 00	190 00
1925	.....	.....	.....	190 00
1926	.....	.....	.....	190 00

	Total Liability Interest and Principal.	Total Collections Received by Township.
1912	$4,403 16	$4,387 50
1913	4,403 16	4,397 50
1914	5,343 16	5,307 50
1915	5,903 16	5,877 50
1916	5,903 16	5,867 50
1917	6,093 16	6,045 00
1918	6,093 16	
1919	6,093 16	
1920	6,093 16	
1921	6,093 16	
1922	1,690 00	
1923	1,690 00	
1924	750 00	
1925	190 00	
1926	190 00	

Huron and Kinloss Municipal Telephone System.

Huron Township Debenture Collections.

			Still Due.
Debentures due Dec. 20, 1912	.....	$4,403 16	
Jan. 4, 1913, Kinloss	$500 00		
March 19, 1913, Kincardine	700 00		
On Huron Township 1912 Roll	3,187 50	4,387 50	$15 66
Debentures due Dec. 20, 1913	.....	$4,403 16	
Jan. 10, 1914, Kinloss	$500 00		
Jan. 27, 1914, Kincardine	720 00		
On Huron Township, 1913 Roll	3,177 50	4,397 50	5·66
Debentures due Dec. 20, 1914	.....	$5,343 16	
From Kinloss	$700 00		
From Kincardine	1,050 00		
On Huron Tax Roll, 1914	3,557 50	5,307 50	35 66
Debentures due Dec. 20, 1915	.....	$5,903 16	
From Kinloss	$870 00		
From Kincardine	1,130 00		
On Huron 1915 Tax Roll	3,877 50	5,877 50	25 66
Debentures due Dec. 20, 1916	.....	$5,903 16	
From Kinloss	$870 00		
From Kincardine	1,130 00		
On Huron 1916 Tax Roll	3,867 50	5,867 50	35 66
Debentures due Dec. 20, 1917	.....	$6,093 16	
From Kinloss	$890 00		
From Kincardine	1,180 00		
On Huron 1917 Tax Roll	3,975 00	6,045 00	48 16
			$166 46
Interest to Dec. 20, 1918			24 54
			$191 00

1917			
Feb. 16	Township received from Thos. McCosh, commuted for his telephone	$56 90	
1918			
Mar. 9	Dr. Sinclair, paid for phone, 18 mos.	$22 50	
	Due from Kincardine Township	26 80	$106 20
			$84 80

HURON TOWNSHIP.

Huron and Kinloss Municipal Telephone System.

Account of Maintenance.

The following was levied for maintenance:

				Overpaid.
Jan. 8, 1916	Paid to H. & K. M. T. System		$1,455 00	
	Received from Kinloss	$217 50		
	Received from Kincardine	282 50		
	On Huron 1916 Roll	952 50	1,452 50	$2 50
Dec. 15, 1917	Paid to H. & K. M. T. System		$1,502 50	
	Received from Kinloss	$222 50		
	Received from Kincardine	295 00		
	On Huron 1917 Roll	980 00	1,497 50	5 00
	Township overpaid System			$7 50
	Interest to Dec. 20, 1918, 5%			50
				$8 00

Statute Labour.

The old system of performing statute labour is still continued in Huron Township. The making of pathmaster's lists, delivering them, and procuring their return is an endless task for the Clerk for which the remuneration per year for serving lists is only $6.00. I find on checking up the By-laws and accounts that the Clerk has not been paid for this service since 1912. He is therefore entitled to receive $6.00 for 6 years, including 1918, and the Council should promptly issue an order for $36.00.

The Clerk.

The work of the Clerk in every department is conducted with accuracy and care and any matters which have not been carried on in a proper manner have been occasioned by being of a nature of which the municipality had no previous experience. The Ripley drain and the telephone system were both new experiences about which no one in the municipality had previous knowledge.

The By-laws, awards, pathmaster's lists, assessment rolls, and all other records were found in excellent shape.

The documents of the Township, including deeds, By-laws, assessment and collector's rolls, minute books, and all other records and books are kept safe from fire in a vault owned by the Clerk in an office occupied as Clerk's office, which is heated and lighted at the expense of the Clerk for which the Township has not paid any rent. The Clerk is entitled to rent and the Council should compensate the Clerk for the past and agree on an amount to be paid yearly for the future.

The Treasurer.

The books, records and vouchers of the Treasurer are carefully kept, all vouchers and other documents required were produced as well as the cash and bank books; his cash book is kept written up regularly.

Loans to the H. & K. Municipal Telephone System were made by handing them the notes which did not go through the Township bank account. The Treasurer had not made entry for some of these notes. They have now been entered.

Debentures were handed to the School Section or telephone system when issued instead of being sold by the township and the proceeds paid over to the proper parties. This will be remedied in the future.

It never has been customary for the Township Treasurer to keep a ledger. One should be opened, and the asset and liability statement at the end of the year should represent the accounts as contained in the ledger.

The Treasurer's cash was checked up to Nov. 14th, 1918, and was found to be correct.

Orders.

Orders are passed by the Council for all payments of moneys except those covered by by-law or statute, such as school section orders and the payment of debentures and coupons.

Accounts with Other Townships.

These are settled every year for all matters pertaining to road work and bridges on boundaries.

Customs.

In Huron Township, as in the case of many other Townships, there still remain some old methods of doing things that have long since been outgrown by progress.

It has been customary for the Township to pay for meals of Councillors the days of Council meetings, who refunded the amount by deducting it from them in December. This was objected to and quite rightly so, and the custom has been relegated to the past.

There is still a custom prevailing which was all right long, long ago when the Treasurer lived on the farm and no hotels were handy, and that is for Auditors to lodge or eat meals at the Treasurer's house. This still exists in part as the Auditors now drive into town and home at night, but have dinner or supper, and on some occasions both meals, at the Treasurer's house. This should cease and the Auditor's remuneration include the cost of meals at the hotel. Possibly the custom has been a source of pleasure to both the Auditors and the Treasurer but might detract from the value of the report.

It has always been my custom not to accept any hospitality from any official where I have been making a Government audit and have thus frequently deprived myself of considerable pleasure on that account. An audit report should be free from anything that might cause suspicion that any partiality could be shown.

Village of Ripley.

The financial standing of the village is shown in the attached statements.

The agreement between the village and the township should be revised and amended from time to time as conditions warrant. A Union School Section Award is amended every five years by a new award and it is in the interests of all that these agreements should be closely watched by the trustees, also by the Municipal Council, and amended when conditions become changed.

Ontario and West Shore Electric Railway.

In 1912 the company failed to pay the interest on the bonds which were guaranteed by Huron Township to the amount of $75,000.00, maturing in December, 1937. The interest amounting to $1,875.00 each half year, comes due on January 1st, $1,875.00; and on July 1st, $1,875.00.

These bonds were guaranteed by the Township of Huron as the result of a By-law submitted to the ratepayers in the west part of the Township only, who became liable for the amount. The property lying west of the road known as the 25th sideroad has to pay the interest and is liable for the $75,000.00 of principal when it comes due December, 1937.

The Township has been in the habit of paying the interest as it falls due and borrowing the amount from the bank on note and keeping the account separate so as to charge the interest to those entitled to pay it.

There have been meetings from time to time with lawyers and officials of other municipalities similarly interested, the expense of which has been charged to a separate account and the amount expended each year to the time the rate by-law is passed and the Roll is made is placed on the Collector's Roll for that year.

This, however, has left the O. & W. S. E. Ry. bond ratepayers always in the Township debt for expenditures after the rate By-law is struck each year and interest on notes till the next year's taxes are paid. Then again on January 1st, $1,875.00 has to be paid for interest which has not been provided for and again July 1st. $1,875.00 more has to be paid by the Township for which no funds have been provided.

The manner in which the levies have been made from 1912 to the present has necessitated the Township borrowing to provide the funds to meet these payments a year in advance of when they receive it.

The explanation why more was not collected in one year was that it would make the taxes high to levy for two years in one. The suggestion that I would make, would be in 1919, instead of collecting $4,000.00 on the Roll to collect one-half more, $2,000.00, making the collection $6,000.00, which would provide funds to meet January 1, 1920 coupons of $1,875.00 and any other charges up to that date. Then on the 1920 Roll collect $6,000.00 which would bring in money in 1920 to meet the January 21st, 1921, and July 1st, 1921, payments of interest.

This transaction must be treated the same as every other debenture levy and collected in advance of the dates on which the Township has to pay the money.

The following statement shows that on July 1st, 1919, the Township will again have advanced over $4,000.00 for which it will not be reimbursed until the amount is collected on the 1919 Tax Roll.

TOWNSHIP OF HURON.

Ont. & W. Shore Elect. Ry. Disbursements to Nov. 15th, 1918, and Levies on Collector's Rolls.

1912 disbursed	$3,940 95	
1912 roll levy		$3,770 37
1913 disbursed	3,971 87	
1913 roll levy		4,018 44
1914 disbursed	4,585 70	
1914 roll levy		3,982 71
1915 disbursed	4,003 61	
1915 roll levy		4,372 79

	1916 disbursed	3,864 50	
	1916 roll levy		3,982 83
	1917 disbursed	3,976 31	
	1917 roll levy		3,879 42
Nov. 14	1918 disbursed to date	3,849 70	
	1918 roll levy		4,049 28
	The following items not yet charged:		
	Interest on advances to Dec. 15, 1918	140 62	
	Amount due after 1918 taxes paid		277 42
		$28,333 26	$28,333 26

Advances not yet collected	$277 42
On Jan. 1st, 1919, coupons to pay	1,875 00
On July 1st, 1919, coupons to pay	1,875 00
Not provided for in 1918 roll	$4,027 42

I have had conversations with some of the ratepayers who have to contribute to the O. & W. S. El. Ry. bond interest, the principal of which matures December, 1937, and have advised any who want to protect themselves in case that the holders of the bonds would take their money before maturity; and be in a position to pay their share of the principal when it matured to buy Victory Bonds at 5½ per cent. to mature in 1933, and if possible exchange them for the previous issue of Victory Bonds which do not mature till 1937, which can be purchased through any bank by communicating with Toronto, where the market price is quoted daily.

Insurance.

The insurance on Telephone Central equipment at Ripley is in the Guardian Assurance Co., Ltd., for $750.00, expiring December 9th, 1918.

Insurance on Township Hall building is $2,500.00 in Dominion Fire Insurance Co., which expires August 17th, 1921.

I would suggest that in view of the tremendous advance in materials of all kinds it would be wise to carefully consider whether more insurance should be placed.

Township Property.

Only such property as is vested in the municipality and could be realized on, can be considered in the assets. A cemetery could not be sold to satisfy a Township debt, and cannot be treated as an asset. Cemetery lots are sold for burial purposes but, on the other hand, there is a continuous liability to keep the cemetery in decent order.

Roads and bridges, although they cost a great deal of money, cannot be classed as an asset.

Huron and Kinloss Municipal Telephone System is not an asset of the Township but of the subscribers.

Schools are the property of the School Board, or Trustees of the Section, and are not owned by the Township and cannot be classed as an asset.

The Township hall is a fixed asset of the Township and in the attached statements is valued at $5,000.00.

The safe and road grader are valued at $250.00 and are fixed assets.

Passive Assets.

Included under this head are all amounts for which the Township is liable as a guarantor, but for which levies are to be made against lands which are directly liable; such as the O. & W. S. El. Bonds and the levies for telephone or for school sections to meet outstanding debentures.

Available Assets.

Under this heading is entered all cash on hand, uncollected taxes, advances to telephone system, O. & W. S. El. Ry. ratepayers, etc.

Liabilities.

These are divided under two headings—Current and Deferred.

The current represents all obligations of the municipality which are due or temporary loans.

The Deferred Liabilities represent the principal of all debentures issued not matured and Bonds guaranteed by the township.

Financial Standing of the Township Dec. 31, 1917.

The attached statement of Assets and Liabilities shows the standing of the township on that date, Dec. 31, 1917, to be in first class shape.

The available assets are	$11,835 54
Against this the current liabilities are	8,808 12
Showing a surplus of	$3,027 42

This is a very satisfactory showing.

The total Assets of the township, which include the Fixed Assets, show that the township has a surplus of Assets over Liabilities of $8,277.42, which includes the value of Township Hall, etc.

Attached hereto is an abstract statement of Receipts and Expenditures of the Township for the year ending December 31, 1917, with details of the items that it contains.

Had I delayed this report to give statements for the year 1918 it would have put the township to additional expense.

Conclusion.

During the audit matters of interest to the township not mentioned in this report were discussed with the Reeve, Councillors and Officials.

I do not blame the officials for some of the conditions that exist in reference to any of the affairs of the township of which the duties were new to them; they did the best they could under the circumstances and with what information they could get.

It very rarely falls to my lot to be able to congratulate a municipality on having in every office such painstaking and accurate officers who give their work close attention for which they are poorly remunerated.

It should be a great source of satisfaction to the ratepayers of Huron Township to know that owing to the accurate way in which the work of the Township

has been carried on by the Clerk and Treasurer, the cost of this audit is about half of what it would have been otherwise.

I desire to thank the officials, members of Council and particularly the Reeve, Treasurer and Clerk for the willing manner in which they have rendered substantial assistance during the continuance of this audit and recommend that they be compensated for the time and trouble to which they have been put.

I shall be pleased to furnish any further explanations, or advise with the Council in reference to any of the matters mentioned in this report.

Yours truly,

A. F. FALLS,

Chartered Accountant.

Chatham, Ont., November 29, 1918.

Cost of this audit, $434.90.

TOWNSHIP OF HURON.

ASSETS, DEC. 31, 1917.

Available Assets.

Cash in bank	$2,077 83	
Taxes, 1917, collected in 1918	6,055 02	
Tax arrears, County Treasurer	20 98	
H. & K. Mun. Tel. System, debenture account due township	109 56	
H. & K. Mun. Tel. System, overpaid maintenance	7 50	
H. & K. Mun. Tel. System, advances and interest	2,686 00	
Ripley Mun. Drain, overdrawn	169 86	
Ripley Mun. Drain, Village to pay 1918	72 93	
Ripley Mun. Drain, Village to pay 1919	72 93	
Kincardine Township, telephone levy, 1912, and interest	26 80	
Kinloss Township, balance telephone levy, 1917	112 50	
County Treas., Leg. Grant, Libraries Dept., Jan. 31, 1918	87 10	
O. & W. S. El. Ry., account advances not levied for	336 38	
Total Available Assets		$11,835 54

Fixed Assets.

Township Hall and Site	$5,000 00	
Safe and grader	250 00	
		5,250 00

Passive Assets.

Bond and Debenture indebtedness to be paid by individual ratepayers, not by all ratepayers:

By-law 371	O. & W. S. El. Ry. Bonds	$75,000 00	
By-law 442	H. & K. M. Tel. System	15,613 37	
By-law 465	H. & K. M. Tel. System	4,771 16	
By-law 505	H. & K. M. Tel. System	3,126 14	
By-law 535	H. & K. M. Tel. System	1,292 30	
By-law 486	S. S. 10, Con. School	5,875 52	
By-law 490	Ripley Mun. Drain	447 92	
			106,126 41
			$123,211 95

LIABILITIES, DEC. 31, 1917.

Current Liabilities.

Village of Ripley, amount at credit	$110 62	
John McLean, order County bridge	953 55	
Outstanding orders paid in 1918	302 43	
Amount due Clerk, pathmaster's lists, 1912-1917	30 00	
Ripley Drain commuted after debentures sold	68 36	
Telephone debentures due Dec. 20, 1917, paid 1918 principal	3,449 99	
Telephone debentures due Dec. 20, 1917, paid 1918 interest	953 17	
Telephone debentures due Dec. 20, 1917, paid 1918 principal	668 04	
Telephone debentures due Dec. 20, 1917, paid 1918 interest	271 96	
Loan from R. Chaplin, 1 year, Nov. 16, 1917, *re* Red Cross	2,000 00	
Total Current Liabilities		$8,808 12
Total Available Assets	$11,835 54	
Total Current Liabilities	8,808 12	
Available Assets exceed Current Liabilities	$3,027 42	

Deferred Liabilities.

Debentures and Guarantee Bonds, Principal Unpaid.

By-law 371	O. & W. S. El. Ry. Bonds all due 1937	$75,000 00	
By-law 442	H. & K. M. Tel. Sys., last due 1921	15,613 37	
By-law 465	H. & K. M. Tel. Sys., last due 1923	4,771 16	
By-law 505	H. & K. M. Tel. Sys., last due 1924	3,126 14	
By-law 535	H. & K. M. Tel. Sys., last due 1926	1,292 30	
By-law 486	S. S. No. 10, Con. School, due 1943	5,875 52	
By-law 490	Ripley Mun. Drain, due 1919	447 92	
			106,126 41
	Assets exceed liabilities		8,277 42
			$123,211 95

ABSTRACT OF RECEIPTS AND EXPENDITURES FOR YEAR ENDING DEC. 31, 1917.

Receipts.

1916		
Dec. 31	By Cash on hand	$1,014 92
	By Resident taxes	44,658 50
	By Arrears of taxes	5 42
	By School grants	1,109 74
	By Loans	8,250 00
	By Cemetery	192 75
	By Telephone	3,619 40
	By County on roads, etc.	2,240 75
	By Provincial Railway Tax	162 88
	By Interest on deposits	54 51
	By Award drains	10 00
	By Red Cross collections	69 11
	By Tile, plank, etc., sold	33 25
	By Fines and fees	65 00
		$61,486 23

ABSTRACT OF RECEIPTS AND EXPENDITURES FOR YEAR ENDING DEC. 31, 1917.

Expenditures.

1916		
	To Election Expense	$99 98
	To Salaries and allowances	1,077 17
	To Printing and Postage	213 22
	To Heat, Light, etc.	59 31
	To County rate	11,245 86
	To Law costs	43 36

To Roads and bridges	10,453 76
To Charity	5 00
To Schools	13,817 01
To Tel. and Ripley Drain debentures, principal	662 57
To Telephone and Ripley debentures, interest	331 85
To School debentures, principal	101 28
To School debentures, interest	328 72
To Loans	7,950 00
To Interest on loans	116 25
To British and Can. Red Cross	2,119 11
To Board of Health	292 00
To Ont. & W. S. El. Ry. charges	3,976 31
To Telephone System, extra collections	2,957 50
To Telephone System, loan advanced	2,686 00
To Police Village of Ripley, 1917	616 54
To Grants	200 00
Award Drains	51 22
To Miscellaneous	114 95
To Cash on hand	1,967 26
	$61,486 23

DETAILS OF RECEIPTS FOR YEAR ENDING DEC. 31, 1917.

Dec. 31	Balance on hand		$1,041 92

Resident Taxes.

Collector taxes, 1916	$4,058 50	
Collector taxes, 1917	40,600 00	
		44,658 50

Arrears of Taxes.

Norman Robertson, County Treasurer	5 42

School Grants.

County Treasurer, legislative grants	$711 96	
County Treasurer, equipment, accommodation, and library grants	397 78	
		1,109 74

Loans

Royal Bank	$3,750 00	
Royal Bank	2,500 00	
Robt. Chaplain	2,000 00	
		8,250 00

Cemetery.

Wm. Herrington, lot	$10 00
Hy. Dahmer, digging	2 50
Frank Funston, half lot	6 00
Matthew Moore, lot	10 00
Alex. Walmsley, lot	10 00
Hy. Dahmer, digging	2 50
Geo. Swalwell, lot	10 00
A. G. McKay, 2 lots	20 00
Jacob Gates, half lot	6 00
Alex. Fraser, lot	10 00
Jno. J. Eater Estate, lot	10 00
Hy. Dahmer, digging	2 25
J. V. Capling, half lot	6 00
D. H. McDonald, lot	10 00
Angus McDonald, half lot	6 00
F. McCharles, lot	10 00
S. A. Irwin, lot	10 00

W. W. Irwin, lot	10 00	
Robt. Johnston, lot	10 00	
Henry Dahmer, digging	1 50	
Peter Robertson Estate, lot	10 00	
Rebecca Logan, lot	10 00	
W. H. Logan, lot	10 00	
		192 75

Telephone.

Treas. Twp. of Kinloss, 1916	$1,000 00	
Treas. Twp. of Kinloss, 1916	87 50	
Huron & Kinloss, for Robt. McCosh	56 90	
Treas. Twp. of Kincardine, 1917	1,475 00	
Treas. Twp. of Kinloss, 1917	1,000 00	
		3,619 40

County Treasurer.

On acct. roads, etc.	2,240 75

Provincial Railway Tax...	162 88

Interest.

Interest on deposits	54 51

Ditch Awards.

Angus Martin	10 00

Red Cross Collections.

S. S. No. 13, Huron	$10 15	
S. S. No. 11, Huron	15 20	
S. S. No. 12, Huron	5 00	
Ripley Continuation School	20 00	
Ripley Public School	8 76	
Women's Institute, Reed's Corners	10 00	
		69 11

Fees, Rents and Fines.

Knox Church, rent of hall	$5 00	
Huron Church, rent of hall	5 00	
Methodist Church, rent of hall	5 00	
Tom Marks, rent of hall	10 00	
Agricultural Society, rent of hall	2 00	
E. J. Reavie, rents	38 00	
		65 00

Tile and Plank, Etc., Sold.

Dick Dunlop, tile	$1 25	
Harry Courtney, plank	1 00	
Robert Geddes, plank	3 00	
Annie and Maggie McRae, stat. lab.	3 50	
Ernie Ackert, plank	3 60	
Collins McMurchy, plank	1 80	
Geo. Chaplain, old timber	2 00	
Angus McLeod, plank	3 15	
Robt. Geddes, plank	1 50	
Rich. Robertson, plank	5 40	
Geo. F. Brooks, old cedar	2 00	
W. C. Smith, timber	2 00	
Wm. Borden, old timber	2 25	
Jno. McDonald	1 60	
		33 25

$61,486 23

TOWNSHIP OF HURON.

DETAILS OF DISBURSEMENTS FOR THE YEAR ENDING DECEMBER 31, 1917.

Expenses of Election and Municipal Government.

1917.			
Jan. 8	To *The Municipal World*, election blanks	$7 20	
July 23	Angus Martyn, returning officer	10 00	
	Joseph Doupe, D. R. O. No. 2	4 00	
	John J. Gamble, D. R. O. No. 1	4 00	
	Joseph Doupe, rent	3 00	
	Samuel Doupe, rent	3 00	
	R. Stanley, rent	3 00	
	John Wilkie, Poll clerk	2 00	
	Mal. McGuire, Poll Clerk	2 00	
	John McLarty, Poll clerk	2 00	
	John Bell, Poll clerk	2 00	
	Angus D. Martyn, Poll clerk	2 00	
	Elisha McDonald, D. R. O.	4 00	
	Donald McCharles, D. R. O.	4 00	
	Robert Swalwell, D. R. O.	4 00	
	Richard Robertson, D. R. O.	4 00	
	C. W. Pollock, rent	3 00	
	Mrs. W. J. McGuire, rent	3 00	
Oct. 15	Angus Martyn, fees re Revision of Voters' List	4 48	
	Angus Martyn, selecting jurors	4 00	
	Reg. Barrett, attendance at Court of Revision and serving notices	2 90	
	Reeve J. N. Wilkinson, selecting Jurors	4 00	
	David Campbell, selecting Jurors	4 00	
	David Campbell, attendance at Court of Revision	2 40	
Nov. 19	Reg. Barrett attendance at Division Court	2 00	
	Angus Martin, attendance, 5 sittings of Division Court	10 00	
			$99 98

Salaries and Allowances.

1917			
Feb. 12	To Wm. Steele, collector, salary, 1916	$73 85	
Mar. 12	Jacob Gates, caretaker, $5.00, and extra meeting, $1.00	6 00	
Apr. 16	Angus Martyn, clerk's salary	50 00	
	W. H. Logan, auditor's salary	10 00	
May 28	Mrs. Jacob Gates, balance salary and extra meetings	9 00	
	David Campbell, assessor	86 50	
	Duncan Campbell, councillor	25 00	
	A. W. Hamilton, councillor	25 00	
	J. N. Wilkinson, reeve	25 00	
June 15	Angus Martyn, clerk, part salary, 1917	50 00	
July 23	Alex. Fraser, councillor	14 37	
Sept. 17	Angus Martyn, part salary, 1917	50 00	
Dec. 15	Roderick Martyn, treasurer	120 00	
	Reeve J. N. Wilkinson, balance salary	52 50	
	A. W. Hamilton, salary	87 40	
	Samuel Brown, salary	101 00	
	Samuel Brown, salary	1 00	
	Duncan Campbell, salary	80 75	
	E. J. Reavie, caretaker, acc. salary and extra meetings	21 00	
Apr. 16	R. W. Mills, salary, auditor	10 00	
Dec. 15	G. H. Ruttle, salary, councillor	25 00	
	G. H. Ruttle, salary, balance	78 80	
	Angus Martyn, salary, balance	75 00	
			1,077 17

Printing, Advertising, Postage and Stationery.

1917		
Jan. 8	To G. H. Mooney, balance printing contract	$50 00
Mar. 12	*The Municipal World*, Assessment Roll Blanks	3 75
Apr. 16	G. H. Mooney, part payment printing contract	15 00

June. 15	G. H. Mooney, part payment printing contract	10 00	
	Municipal World, blanks for Voters' List	88	
July 23	Angus Martyn, postage and stationery, to date	9 36	
Aug. 13	G. H. Mooney, part printing contract, etc.	98 35	
Oct. 15	*The Municipal World*, for Collector's Roll	3 75	
Dec. 15	R. Martyn, Financial Statement, postage and war tax and stationery	12 60	
1917			
Dec. 15	Angus Martyn, postage and stationery	9 53	
			213 22

Insurance, Heat, Light, and Care of Building.

1917			
Jan. 8	To D. B. McLeod, can dustbane for hall	$0 25	
	Jacob Gates, extra meetings	4 00	
Feb. 12	Jacob Gates, two extra meetings	2 00	
	Ripley Acetylene Gas Co., gas for hall	7 65	
	Municipal World, six subscriptions	6 00	
	Municipal World, debenture blanks, etc.	1 86	
Mar. 12	D. B. McLeod, box of tapers	20	
	Ripley Acetylene Gas Co., gas for hall	60	
July 23	Ripley Acetylene Gas Co., gas for hall	3 90	
Sept. 17	Ripley Acetylene Gas Co., for gas	15	
	James McTavish, coal for hall	27 45	
Nov. 19	Ripley Acetylene Gas Co., gas bill	5 25	
			59 31

County Rates.

1917		
Dec. 15.	To Norman Robertson, county treasurer, county rates, 1917	11,245 86

Law Costs.

Dec. 15	To John F. Collins, judgment in suit and witness fees	$13 25	
	P. A. Malcomson	25 59	
	Angus Martyn, costs Collins suit	4 52	
			43 36

Roads and Bridges.

Jan. 8	To John McKenzie, ditch and culvert, furnishing tile	10 00
	Thos. Ray, rep. culvert and ditch, con. A	75
	Duncan McTavish, culvert and stringers, con. 2	5 00
	John H. Collins, refund on account, statute labour	8 13
	W. R. Hamilton, rep. bridge, lot 5, con. 2	1 00
	Clarence Hooey rep. culvert and hauling plank	1 00
	Wm. McLeod, filling washout and rep. culvert	2 00
Feb. 12	Treas. Kinloss Tp., balance of boundary account	42 53
	Wm. Wright, on acc. tile	13 72
	Duncan Munn, bill of hardware	2 00
Mar. 12	Matthew Moore, rep. bridge, lot 23, con. 6, 1916	1 00
	Donald Murchison, for gravel, 1916	6 40
	Gilbert Barkwell, for gravel	1 20
Apr. 16	Thomas Sandy, discing S. L. 15	3 00
	Chas Collins, shovelling snow off grader and hauling same	3 00
	Angus McKay, rep. culvert and digging ditch, con. 6	3 00
	Jas. Patterson, discing snow, S. L. 15	2 00
	Joseph Black, one load of stone to culvert	1 00
	Wm. McMurchy, shovelling snow	3 00
	Robt. Johnston, filling approach and one load of stone, con. 10	1 50
	Clarence Hooey, grading	5 00
May 28	John Mason, shovelling snow	2 00
	John Dahmer, dragging on S. L. 15	2 50
	Walter Roulston, cleaning ditch and tile	9 90
	Geo. Huston, rep. approach to bridge, con. 8	2 00
	Thos. Lowry, rep. approach to bridge and 3 loads stone	5 00
	W. W. Irwin, going after drag	50

	John Rhyver, rep. culvert, S. L. 20, con. 6	1 00
	W. W. Irwin, dragging on S. L. 15	2 50
	Frank Funston, dragging on S. L.	4 00
	Thos. Lowry, for 5 yds. gravel, con. 10	4 25
	Angus Murray, rep. bridge, con. 6	2 00
	Joseph Black, 12 yds. gravel at 80 cents	9 60
	Wm. Jeater, rep. roads and culverts, con. A	1 00
	Thos. Donnelly, filling holes	1 50
	Robt. A. Pollock, for cement tile	40 00
	R. McLennan, shovelling snow	2 00
	John Fair, rep. culvert and one load gravel, con. 12	1 50
	David Brooks, work with drag, S. L. 15	5 00
	Armstrong Bros., dragging Saugeen Line and filling washout	6 00
June 16	Ed. McKay, rep. approach to bridge, S. L. 5	7 00
15	Jas. Patterson, rep. culvert S. L. 15	2 00
	W. J. Roulston, work with drag, S. L. 15	5 00
	John T. McCreight, filling washout, con. 5	1 00
July 23	Wm. Bell, gravel	1 12
	Wm. Bell, gravel	2 08
	John L. Gamble, gravel	1 92
	John L. Gamble, gravel	5 76
	John Henderson, gravel	96
	Johnston Roulston, gravel	5 20
	Wm. Bell, posts, wires and filling washout, Lake Road	7 00
	Philip Teskey, filling washout, S. L. 20	5 00
	Roy Campbell, rep. abutments	5 00
	Thos. Bell, use of timber for bridge, con. 2	3 00
	Alex. McNair, bridge and railing	22 00
	Alex. McNair, right of way	5 00
	Alex. McNair, load of stone	2 00
	John Walden, filling washout, lot 12, con. A	1 00
	Lester Armstrong, filling approach	17 00
	John McLean, work on hill, S. L. 15	3 00
	John McLean, bridge, etc., S. L. 15	9 15
	John McLean, part payment of abutment, lot 40, con. 4	200 00
	John Lowry, work on bridge	2 50
	Hugh Henderson, rep. bridge, lot 79, con. 2	2 00
	John Reid, filling washout	1 00
	John Walden, rep. washout	30 00
	Clement Brown, filling washout	2 25
	Albert Nesbitt, work	30 00
	John A. Campbell, plank	156 00
	Wm. J. Brown, rep. bridge	3 00
	John H. Reid, work on Saugeen Line	5 00
	Dan. Smeltzer, filling washout, Base Line	2 00
	Kenneth McLay, building temporary bridge, con. 6	3 50
	Angus McIntosh, rep. abutments	13 00
	R. J. Lowry, work	11 50
	Alex. McMurchy, team and straw	6 00
	John Rhyver, rep. 2 culverts, S. L. 20, con. 6	7 00
	Walter Roulston, culvert work, S. L. 10, con. 2	29 50
	John Lindsay, temporary bridge, S. L. 25, con. 9	3 00
	H. Mitchell, breaking road	1 50
	John McCreight, work on County bridge	10 00
	Robt. Watson, rep. culvert	3 00
	John Beattie, gravel	1 92
	Thos. Harris, gravel	8 40
	A. Cook Hamilton, gravel	6 64
	John Watson, gravel	1 68
	Jas. D. Pollock, rep. road and gravelling, con. 7	20 00
	Walter Steele, filling abutments at bridge, con. 1	10 00
	Shem Stanley, rep. culvert, and filling washout, con. 10	5 00
	John McDonald, rep. bridge	8 00
	Frank Mitchell, man and team on grader	9 00
	Thos. Holmes, shovelling gravel, 2 days	4 00
	Joseph Black, for bridge L. 15, con. 1	4 25
	Joseph Black, rep. hill and building bridge	10 75
	R. W. Campbell, barricades on S. L. 10, con. 12	1 00

	James Cornish, work on grader and going for same	15 50
	Alex. McTavish, right of way	5 75
	Robt. Johnston, rep. approach to bridge, con. 9	1 75
	Roy McGuire, moving culvert and filling holes	3 00
	Ernest Wilds, work on con. 6	5 00
	Robt. Irwin, work on Borden's bridge	29 50
	Geo. Brooks, rep. culvert, S. L. 15, con. 5	50
	Richard Creech, work Saugeen Road	2 00
	Angus E. McLeod, work bridge, con. 6	4 00
	Wm. Hill, rep. culvert, lot 2, con. 12	1 00
	David Murray, work with team on S. L. 15, con. 6	18 00
	John A. Farrell, filling washout, scraping and gravel	17 50
	John A. Farrell, work at temporary bridge, S. L. 25	1 25
	Wm. J. Pollock, rep. tile at culvert, con. 11	2 50
	Angus Murray, work, S. L. 15, con. 6	9 00
	David Murray, work at hill, S. L. 15	3 00
	H. Ensign, filling washout and gravelling on Bdy. L 16	10 00
Aug. 13	Jas. Montgomery, man and team	8 00
	Kenneth McLay, building cement culvert, con. 9	171 12
	Angus McLay, contract cement culvert, con. 7	287 48
	Dan. C. McDonald, shovelling gravel	2 00
	John Nesbitt, one day	2 50
	Matthew Welsh, work and board for men	2 65
	John Walden, watering abutments and insp. cont.	11 00
	James Sheills, spikes	85
	Harry Courtnes, one day	2 50
	Allan McLay, filling washout, con. 7	6 00
	D. B. McLeod, hardware	37 95
	Robt. A. Pollock, filling washout, con. 11	9 00
	Robt. A. Pollock, balance on account	7 75
	Wm. Shevin, hauling tile and rep. culvert, con. 12	2 00
	Angus McLay, balance on cement culvert, S. L. 25	10 00
	John Wright, filling washout and materials	22 00
	Alex. McCosh, filling hole	8 00
	Mrs. Porter, gravel	5 52
	E. Wilde, balance on account	50
	John Lindsay, filling approach and watering culvert and inspecting same	26 50
	W. D. Bradley, work Saugeen Road	8 00
	Jas. Hardie, rep. approach to culvert, con. A	2 60
	Jas. Hardie, rep. tile, culvert, con. 9	3 00
	John McKay, gravel	3 84
	John McKay, gravel	1 60
	Robt. McCosh, gravel	96
	D. M. Stewart, inspecting McKenzie's cont.	3 75
	Mrs. McCorvie, gravel	8 80
	Stewart Campbell, rep. culvert, con. 10	3 00
	Emil Ritchie, hauling plank and making road	24 00
	Jas. Cameron, rep. washout on hill 60-A	18 00
	Thos. Farrell, gravel	5 20
	John McRae, gravel	3 76
	John McIver, gravel	1 60
	Duncan McKenzie, gravelling on Boundary	82 75
	Wm. Emmerton, filling approach to bridge, con. A	11 50
	John Kennedy, rep. washout, lot 25, con. 2	2 75
	John H. McDonald, rep. culvert, S. L. 10, con. 2	3 10
	William Becking, lumber	270 06
	Joseph Fletcher, gravel	2 88
	Duncan McKenzie, filling washout on culvert, S. L. 15, con. 1	4 75
	Geo. Shiells, culvert, S. L. 25, con. 2	14 60
	Merton Fraser, man and team	6 75
	Robt. Irwin, rep. washout at lot 23, con. 3	4 50
	W. D. Bradley, operating grader	3 75
	Robt. S. Wilson, work on grader and going for same	7 75
	Peter Kehoe, gravel and filling washout	18 12
	Peter Reavie, man and team on grader	6 75
	Thomas Sandy, tile	13 16
	Thos. Farrell, gravel	32

	Stewart Campbell, rep. grader and hauling same to Ripley	2 25
	Donald McLeod, fixing abutments, lot 10, con. 3 and 4	4 50
	John Bell, inspecting McLay's contract	11 25
	John Bell, lantern at culvert, con. 7	75
	John Bell, filling approach to culvert, con. 7	5 00
	John Bell, rep. culvert, con. A	1 50
	John McLean, bal. on cement cont. Lot. 40, con. 4	26 75
Sept. 17	Kenneth and Angus McKay, part payment on abutment at Borden's Bridge and balance on breakwater	275 29
	Kenneth McLay, part payments on breakwater, Lot 37, con. 6	300 00
	John McLean, breakwater at Henderson's, con. A	107 33
	David Murray, hauling gravel	1 50
	David Murray, rep. bridge	3 00
	A. C. Hamilton, gravel	4 80
	Thos Smith, railing and filling at culvert, con. 1	1 50
	John Henderson, gravel	2 72
	Albert Brown, gravel	72
	Samuel Brown, work on Robbs bridge	37 35
	John Henderson, filling at breakwater, lot 7, con. A	1 50
	Wm. Henderson, rep. bridge, con. 2	2 00
	Fred. Humphrey, right of way, rep. road and fencing, con. 1	10 00
	John Henderson, insp. breakwater, McLean's contract	6 25
	Henry Carter, rep. bridge, S. L. 20, con. 9	2 00
	Joseph H. Cuthbert, stone and gravel, lot 4, con. 8	18 00
	Joseph Black, rep. Brook's bridge, S. L. 15	1 50
	Joseph Black, gravel	7 12
	John McLean, abutment and floor to bridge at Alma	120 48
	Gilbert Farrell, gravel	6 48
	Wm. Hooey, stringers	21 00
	James Hardie, rep. culvert, rep. and filling Dawson's hill	12 00
	Joseph Colling, gravel	1 60
	Alex. McNair, rep. culvert, con. 2	1 50
	Alex. McNair, gravel	4 64
	Frank Funston, work on Siddon's bridge	3 00
	John McKay, gravel	7 44
	Robt. T. McCosh, rep. culvert 40-7	2 15
	Alex. McDonald, gravel	3 20
	G. H. Humphrey, inspecting bridge and work	31 50
	Gilbert Barkwell, gravel	2 40
	Mrs. Porter, gravel	2 40
	Wm. Jackson, hauling plank and covering culvert	1 50
	Wm. Bell, gravel	4 56
	John Watson, gravel	2 00
	John Watson, gravel	80
	John Watson, rep. bridge, con. A	4 20
	James Brown, inspecting bridge at Alma	11 25
	James Brown, watering culvert	1 00
	John L. Gamble, gravel	1 92
	Emmett Ritchie, cement arch cont. and ditch, con. A	491 51
	Edward Snowden, inspecting Ritchie's contract	27 50
	Thos Farrell, gravel	3 84
	John V. Caplins, work	2 00
	Wm. Geddes, hauling and laying plank, Funston's bridge	3 00
	Bert Ward, rep. culvert	50
	John McLean, work on bridge cont. S. L. 15, con. 6	24 00
	John McLean, part payment Humphrey's bridge	300 00
	John McLean, work on bridge	1 75
	Norman McLeod, gravel	64
	Norman McLeod, gravel	1 84
	Kenneth McLeod, part payment of arch S. L. 15	200 00
	Kenneth McLeod, breakwater, S. L. 25, con. 1	11 00
	Wm. McLeod, gravel	88
	James Pollock, balance on contract	5 00
	Joseph Fletcher, gravel	3.52
	Robt. Chaplin, gravel	5 20
	Robt. Chaplin, gravel	40
	Hugh Cameron, rep. culvert, con. 10	3 75
	Hugh Cameron, gravel	2 88

	Geo. Tout, gravel	96
	Geo. Tout, gravel	2 08
	Hugh Cameron, gravel	2 80
	V. E. Gawley, gravel	4 00
	John W. Fair, gravel	1 76
Oct. 15	Peter Kehoe, gravel to pathmasters	10 16
	John Henderson, gravel	3 36
	John Smeltzar, gravel	5 20
	Alex. Fraser, gravel	5 28
	Alex. Fraser, gravel	2 96
	A. W. Patterson, 99 yards gravel	52 32
	Richard Stanley, gravel	7 44
	Mal. McKay, gravel	48
	Henry Stephenson, gravel	20 08
	Angus D. Martyn, gravel	56
	H. Farnell, gravel	56
	H. Farnell, gravel	5 92
	John Lindsay, for bridge insp. cont. and work at culvert	50 00
	Kenneth McLay and Angus McLay, abutments of bridge	250 50
	McLay Bros., abutments of culvert, con. 11	90 13
	McLay Bros., cement abutments (at Borden's)	63 60
	Clarence Hooey, rep. culvert and load of gravel	1 75
	Thomas McGuire, filling at Wilson's arch	8 75
	Kenneth McLeod, filling at Wilson's arch	2 00
	Alex. McNair, filling at Wilson's arch	5 00
	Robt. Irwin, filling at Wilson's arch	15 75
	John McLean, for culvert, lot 20, con. 11	87 37
	John McLean, cement culvert, con. 12	92 68
	Bert Ward, rep. culvert, lot 20, con. 1	50
	Donald Gilles, rep. approach to bridge, con. 9	6 00
	Kenneth McLeod, balance of contract cement arch, con. 2	163 67
	Robt. Irwin, inspecting McLay's contract (Borden's bridge)	15 00
	Robt. Irwin, part payment of bridge and work, con. 4	42 00
	Peter McDonald, contract of filling bridge and rep. breakwater	34 00
	Malcolm Smith, gravel	8 64
	Wm. Robertson, gravel	4 00
	Wm. Robertson, gravel	6 00
	Mal. McGuire, filling at Wilson's arch	7 50
	Peter Kehoe, inspecting McLean's contract	7 50
	Peter Kehoe, inspecting contract at lot 20, con. 11	4 50
	Peter Kehoe, rep. bridge	13 80
	Albert Nesbitt, covering bridge, lot 34, con. 2	3 50
	Fred. Henderson, hauling Humphrey's bridge	5 00
	Fred. Humphrey, shovelling clay	3 00
	Jas Blue, plan and work on 2 culverts	5 00
	Wm. Henderson, hauling Humphrey's bridge and rep. bridge	6 00
	David Campbell, Humphrey's bridge	5 00
	James Brown, filling and putting in culvert at Alma	9 00
	A. W. Hamilton, filling at Wilson's arch	8 75
	A. C. Hamilton, filling at Wilson's arch	5 00
	Geo. F. Brooks, filling at Wilson's arch	15 75
	Wm. Hill, inspecting McLay's contract, con. 11	7 50
	Hunter Bridge & Boiler Co., for steel bridge (Humphrey's)	835 00
	John McIntosh, inspecting gravel contract, S. L. 15	6 25
	Duncan Campbell, stringers for culvert	1 00
	James Stanley, rep. culvert at lot 1, con. 9	10 00
	George Huston, rep culvert, S. L. 30, con. 8	3 00
	Wm. McMurchy, inspecting Wilson's arch	25 00
	Kenneth McLay, rep. culvert, con. 8	1 00
	Chas. R. Collins, filling at culvert, con. 11	15 00
	Geo. Emmerson, stone and filling washout	1 50
	John Rhyver, work at bridge and rep. culvert	5 00
	Ernest Osborne, filling at culvert, con. 11	2 50
	W. J. McConnell, gravel	4 00
	A. B. Wilson, watering arch	2 00
	Donald McKenzie, gravel	96
	Angus McLeod, gravel	96
	John Harris, gravel	4 00

	John McDonald, gravel	32
	Thos. Farrell, gravel	2 16
	Thos. Scott, rep. approach to bridge, lot 30, con. 2	2 50
	Emmett Ritchie, balance on contract, lot 41, con. A, and rep. arch	58 18
	Edward Snowden, inspecting Ritchie's contract	6 25
	Edward Snowden filling and rep. road	71 50
	Wm. Hill, use of lantern	1 88
	Joseph Colling, filling at arch	6 25
	Henry Campbell, rep. culvert	50
	John Kennedy, rep. bridge, lot 25, con. 3	50
	Robt. Johnston, rep. approach to bridge	20 75
	R. J. Lowry, stringers for bridge, S. L. 25, con. 10	6 40
	Alex. McDonald, cleaning ditch	1 00
	Wm. Jackson, cleaning ditch	1 00
Nov. 19	Neil Campbell, 2½ days with team on grader	11 25
	J. B. Ross, work with team on grader	12 00
	J. Miller, grading S. L. 15, con. 1 and 2	15 00
	W. R. Hamilton, team on grader	13 50
	Thos. Donnelly, shovelling gravel	1 00
	Miller and McDonald, filling at arch and making ditch	178 00
	Walter Roulston, cement arch, lot 17, con. 2	747 86
	Walter Roulston, lantern	7 50
	G. H. Humphrey, inspecting McLean's contract	5 00
	Fred. Humphreys, rep. breakwater and approaches	25 25
	David Henderson, scraping at Humphrey's bridge	1 25
	Albert McPherson, rep. bridge, and gravel	1 50
	Albert Campbell, gravel, rep. culvert	14 20
	John McLean, floor of cement bridge	102 25
	John McLean, floor of cement arch, lot 24, con. A	44 00
	John McLean, balance contract of abutment	70 40
	Kenneth McLeod, part payment of cement arch and railing	1,030 00
	D. S. McDonald, filling hole in road	2 50
	John Wilkie, rep. approach to culvert	1 00
	Hunter Bridge & Boiler Co., balance of bridge	15 00
	John McMurchy, grading on flats	9 00
	John Bell, inspecting Angus McLay's contract	15 00
	D. M. Stewart, inspecting Roulston's contract	34 38
	R. McLennan, filling washout, lot 57, con. 1	45 00
	R. W. Johnston, putting in culvert	2 00
	George Huston, filling approach to bridge and furnishing timber	7 00
	John McIver, gravel to pathmaster	5 36
	W. H. Jeater, rep. road	75
27	Wm. Robb, tile	50
	John Scott, work at bridge	1 50
	W. J. McConnell, gravel	6 88
	Albert Farrell, tile drain	1 00
	Peter Kehoe, lanterns at culvert and watering same	3 00
	Geo. McGillivray, gravel	1 12
	Samuel McMurchy, gravelling con. 6	10 00
	Emil Ritchie, half of contract	1 60
Dec. 6	Geo. Brooks, rep. culvert	1 50
15	Dan. McDonald, rep. bridge, lot 26, con. 7	1 00
	Kenneth McLeod, balance on McNair's arch	1,169 38
	Mrs. Porter, gravel	1 44
	John Henderson, gravel	2 80
	Manasseh Armstrong, rep. approach, Saugeen Line	1 00
	John Farrell, rep. approach to bridge	1 00
	John Lindsay, gravel	10 40
	Robt. Irwin, inspecting K. McLeod, work	61 25
	Robt. Irwin, Borden's bridge and work	10 00
	Dave Stewart, inspecting McLean's contract	1 25
	W. J. Roulston, filling hole, lot 10, con. 2	50
	Jno. Fair, filling washout	6 00
	Neil McCallum, repair culvert	4 00
	Duncan Munn, hardware	13 48
	Wm. McMullen, repair Funston bridge	2 00
	D. B. McLeod, hardware bill	1 75

	Ernest Osborne, gravel	2 50
	Thos. E. Morgan, cedar posts	2 25
	Jas. McCormack, rep. road, lot 60, con. A	2 25
	C. W. Pollock, rep. bridge, lot 40, con. A	8 00
	Hugh Cameron, gravel	7 20
	Angus E. McLeod, bridge, lot 17, con. 6	3 00
27	Sam. Geddes, repairing bridge, Funston's	2 00
	Geo. F. Brooks, filling hole	50
	E. Hodgkinson, approach to bridge	12 50
		$10,453 76

Charity.

1917		
Jan. 8	Hospital Sick Children	$5 00

Schools.

1917		
Jan. 8	To S. S. No. 3, special library grant, 1916	$7 86
	S. S. No. 5, special library grant, 1916	9 65
	S. S. No. 11, special library grant, 1916	10 00
	S. S. No. 13, special library grant, 1916	7 62
Mar 12	David Henderson, equipment and accommodation grant, S. S. No. 9, for 1916	16 79
Oct. 15	S. S. No. 2, legislative grant	46 25
	S. S. No. 10, legislative grant	151 25
	S. S. No. 11, legislative grant	22 71
	S. S. No. 12, legislative grant	40 00
	S. S. No. 7, legislative grant	40 00
	S. S. No. 13, legislative grant	48 75
Oct. 29	S. S. No. 14, legislative grant	49 38
30	S. S. No. 1, legislative grant	40 00
Nov. 1	S. S. No. 4, legislative grant	40 00
2	S. S. No. 9, legislative grant	16 25
	S. S. No. 5, legislative grant	51 75
3	S. S. No. 8, legislative grant	40 00
	S. S. No. 6, legislative grant	35 62
7	S. S. No. 15, legislative grant	50 00
15	S. S. No. 3, legislative grant	40 00
Dec. 6	Vincent Wardell, equipment and accommodation grant, S. S. No. 2	32 97
	S. S. No. 1, equip., accom. and library grant	36 81
	S. S. No. 5, equip., accom. and library grant	19 58
	S. S. No. 6, equip., accom. and library grant	21 44
8	S. S. No. 10, equip., accom. and library grant	39 06
12	S. S. No. 13, equip., accom. and library grant	36 53
	S. S. No. 10, levy for 1917	2,405 64
15	S. S. No. 4, equip. and accom. grant	5 85
	S. S. No. 7, equip. and accom. grant	17 33
	S. S. No. 15, equip. and accom. grant	21 07
	S. S. No. 11, equip. and accom. grant	30 84
	S. S. No. 9, equip. and accom. grant	21 00
	S. S. No. 4, equip. and accom. grant	21 72
	S. S. No. 8, equip. and accom. grant	20 83
	S. S. No. 12, equip. and accom. grant	29 39
	S. S. No. 3, equip. and accom. grant	20 63
	S. S. No. 1, Jos. Smelton, levy	850 38
	U. S. S. No. 4, John Finlayson, levy	416 16
	S. S. No. 2, Vincent Wardell, levy	775 00
	S. S. No. 4, W. H. Logan, levy	787 50
	S. S. No. 7, Wm. G. Emmerton, levy	600 58
	S. S. No. 13, David Campbell, levy	751 14
	S. S. No. 5, Jno. Cameron, levy	699 40
	S. S. No. 11, Peter McTavish, levy	750 00
	S. S. No. 9, David Henderson, levy	737 31
19	S. S. No. 6, Geo. Huston, levy	750 66
	S. S. No. 15, Wm. Elliott, levy	701 94
20	S. S. No. 8, Donald Smith, levy	675 00
	S. S. No. 12, Alex. Fraser, levy	675 49

	S. S. No. 3, S. W. Pollock, levy	700 32
	U. S. S. No. 14, D. G. McKenzie, levy	329 33
	U. S. S. No. 14, D. G. McKenzie, equip. and accom.	22 23
27	S. S. No. 6, special library grant	10 00
	S. S. No. 13, special library grant	10 00
	S. S. No. 10, special library grant	10 00
	S. S. No. 2, special library grant	10 00
	S. S. No. 3, special library grant	10 00
		$13,817 01

Telephone and Ripley Drain, Debentures and Interest.

1917		Principal	Interest	
Dec. 20	Telephone Debenture No. 4	$106 10	$83 90	
	Telephone Debenture No. 3	351 35	208 65	
	Ripley Drain Debenture	205 12	39 30	
		$662 57	$331 85	$994 42

School Debentures and Interest.

1917				
Dec. 20	Continuation School	$101 28	$328 72	$430 00

Loans.

1917			
Nov. 10	Robt. Chaplain, Red Cross, 1916	$1,700 00	
Dec. 27	Royal Bank, Elect. Ry. Notes	3,750 00	
31	Royal Bank, current expenses	2,500 00	
			$7,950 00

Interest on Loans.

1917			
Nov. 10	Robt. Chaplain	85 00	
Dec. 31	Royal Bank, current expenses	31 25	
			$116 25

Red Cross (British and Canadian).

1917			
Sept. 17	To Ripley Red Cross (Canadian), grant for yarn	$50 00	
Nov. 27	Grant to British Red Cross	2,069 11	
			$2,119 11

Board of Health.

1917			
Mar. 12	To Mrs. (Dr.) McCrimmon, balance salary M. H. O.	$27 00	
July 23	To Dr. L. C. Sinclair, attending Health Conference at Toronto	15 00	
Dec. 15	To J. N. Wilkinson, attendance at four meetings	8 00	
	Duncan Campbell, services	8 00	
	Dr. Sinclair, salary and meetings	131 00	
	Angus Martyn, meetings	8 00	
	Jno. S. Robertson, sanitary inspector	95 00	
			$292 00

Ontario and West Shore Railway.

1917			
Jan. 2	To Royal Bank, O. & W. S. Elect. Ry., coupons, 1st Jan., 1917 issue	$1,875 00	
8	L. L. Knox, O. W. S. Elect. Ry., legal fees, Osler trial	54 16	
May 28	W. D. Bradley, attendance at two meetings *re* West Shore Railway	5 00	
28	P. A. Malcolmson, *re* suit against Toronto General Trust	37 50	

1917			
July 1	Royal Bank, O. & W. S. Elect. Rly., interest on coupons, July issue	1,625 00	
23	James Brown, attendance at three meetings of Elect. Ry.	5 00	
23	Thomas Strothers, advertising sale of material and work *re* Elect. Ry.	28 45	
Nov. 27	Royal Bank, O. W. & S. Elect. Ry. coupons	250 00	
Dec. 27	Royal Bank, interest on note	96 20	
			$3,976 31

Telephone System.

1917			
Jan. 8	Angus Martyn, extra tax	$1,455 00	
Dec. 15	Angus Martyn, extra tax	1,502 50	
			$2,957 50
15	Royal Bank loan and interest		2,686 00

Police Village of Ripley.

1917			
Dec. 15	Trustees' share of taxes		616 54

Grants.

1917			
Feb. 12	Women's Institute, yarn	$25 00	
Mar. 12	Mrs. H. Mitchell, yarn	25 00	
Oct. 15	Huron Township, patriotic	100 00	
Dec. 15	W. J. Crawford, agricultural grant	50 00	
			200 00

Award Drain.

1917			
Jan. 8	E. D. Bolton, fees Brotchies Award	$21 00	
8	Angus Martyn, fees Brotchies Award	4 60	
Sept. 17	E. D. Bolton, fees Robt. McDonald	15 00	
Dec. 15	Angus Martyn, fees D. W. & W.	10 62	
			51 22

Miscellaneous.

1917			
Jan. 8	Hy. Carter, refund of dog tax	$1 00	
Nov. 19	Wm. Sutherland, damage sheep	62 00	
27	Robert McCosh, damage sheep	16 00	
Feb. 12	Angus Martyn, B. M. & D.	17 20	
Mar. 12	Mrs. Dierlamm, use of room	3 00	
July 23	Angus Martyn, reporting fires	50	
Dec. 15	Hy. Dahmer, work cemetery	8 00	
May 28	Hy. Dahmer, work cemetery	7 25	
			114 95
	Total Disbursements		$59,518 97
Dec. 31, 1917	Balance on hand		1,967 26
			$61,486 23

THE POLICE VILLAGE OF RIPLEY.

RECEIPTS AND DISBURSEMENTS FOR YEAR ENDING DECEMBER, 31, 1917.

Receipts.

1917			
Mar. 2	D. B. McLeod, rent of office hall	$12 00	
Nov. 21	Thos. E. Morgan, 2 posts	40	
Dec. 15	Township of Huron, 1917 rates	616 54	
			$628 94

Disbursements.

1917			
Jan. 1	To Balance Debtor, carried from previous year	$212 71	
31	Ripley Acetylene Gas Co., gas bill	40 00	
Feb. 20	Murdoch Campbell, shovelling snow	1 00	
19	Angus Martyn, nomination attendance for 1915-16	4 00	
Mar. 23	G. H. Mooney, printing nomination bills	2 00	
23	D. M. McDonald, hardware	6 74	
23	Murdoch Campbell, opening catch basin	1 00	
26	Murdoch Campbell, shovelling snow	1 00	
26	John McLean, shovelling snow	1 00	
31	John F. Collins, shovelling snow	1 00	
31	John McLean, shovelling snow	2 00	
26	John F. Collins, shovelling snow	2 00	
Apr. 14	E. J. Reavie, lighting lamps till April 1st	24 65	
25	James McTavish, fixing road	25	
25	Duncan Munn, account of lights	18 00	
26	Angus Martyn, gas	25 40	
May 14	John Dahmer, scraping streets	2 25	
14	E. J. Reavie, lighting lamps	6 80	
19	John McLean, work on catch basins	4 50	
19	Angus Murray, work on catch basins	4 50	
19	Kenneth McLay, work on catch basins	4 75	
26	John Collins, picking stones	1 00	
June 2	James McTavish, filling hole	25	
July 12	Angus Martyn, gas	14 50	
13	Kenneth McLay, work on street	3 50	
25	A. Martyn, gas	7 40	
Nov. 8	A. Martyn, gas for police village of Ripley	29 10	
17	John Shelton, trimming trees	9 20	
Dec. 3	D. Munn, street lamps	15 00	
8	D. B. McLeod, street lamps	42 80	
31	Miss Ida Martyn, grant Red Cross	10 00	
31	D. B. McLeod, street lamps and gas	19 92	
			$518 32
31	Balance on hand		110 62
			628 94

27TH DECEMBER, 1918.

To the Reeve and Council, Township of Cardiff, Ontario.

GENTLEMEN,—Acting under instructions from the Provincial Municipal Auditor, J. W. Sharpe, K.C. and Order-in-Council under date of the 13th day of September, 1918, an inspection, audit, and examination of the books, vouchers, and moneys of the Municipality of the Township of Cardiff was made from the 1st January, 1911 to the 1st June, 1918.

Inspection was granted under a resolution from the Municipal Council.

TOWNSHIP OF CARDIFF.

CASH STATEMENTS.

Auditor's reports for the years 1911 to 1917 contained the receipts and expenditures. These were checked over with the Municipal Cash Book, and with the exception of that report for the year 1914, were found correct.

Statement 1st January to 17th August, 1918 as drawn from the Municipal Cash Book, discloses a balance in the hands of the Treasurer at the 17th August, 1918 of $226.61.

The following items did not appear among the cash receipts, and were accordingly entered.

Jan. 19, 1918. Cash received from Collector on 1915 Roll, per receipt stub..	$35 40
Feb. 11 1918. Cash received from Collector on 1917 Roll, per receipt stub	43 78

In dealing with the 1914 report the Auditor's for that year have omitted five payments to school sections amounting to $318.38. They have included in their report an item of $27.00 which they marked P. J. Lowry overpaid 1913, which is really some ledger account difference. This makes a net amount of $291.38 for which the Treasurer for the year 1914 did not receive credit. Details of these omissions appear hereunder.

Items omitted from Auditor's report in year 1914, but appearing in Cash Book and supported by properly signed receipts.

Jan. 7th, 1914.	J. P. Mumford	S.S. No. 5.	C.B. 90.....	$50 00
Jan. 28th, 1914.	T. J. Lowry,	S.S. No. 4.	C.B. 90.....	152 50
Feb. 2nd, 1914.	J. P. Mumford,	S.S. No. 5.	C.B. 90.....	19 63
Feb. 9th, 1914.	J. G. Anderson.	S.S. No. 6.	C.B. 90.....	85 00
Mar. 9th. 1914.	H. McGillivray.	S.S. No. 7.	C.B. 91.....	11 25
				$318 38
			Less T. J. Lowry, Overpaid, 1913, ...	27 00
				$291 38

Cash book, 1914, Receipts	$2,587 85	
Payments	2,176 08	
Correct Cash Balance		$411 77
Add Differences above		291 38
Cash Balance, per Auditor's Report		$703 15

From this statement it would appear that the Treasurer for the year 1914 is to receive a credit of $291.38, however, certain items that should have been entered among the cash receipts for that year were omitted. Receipts stubs show these as follows:

July 15th, 1914.	No. 45.	T. D. Covert	$10 00	Taxes.
Oct. 1st, 1914.	No. 51.	A. Southworth ..	21 67	Deposit from Eli Clark on lots 15, 16, Con. 12, Cardiff, to apply on land sale for 1912-13-14.
Dec. 24th, 1914.	No. 62.	A. Southworth ..	11 34	For W. Green, taxes, 1913.
Dec. 24th, 1914.	No. 63.	A. Morton	135 00*	Repaid by School Section No. 3.
Dec. 15th, 1904.	No. 65.	A. Southworth ..	17 25	Taxes, Roll 1913.
			$195 26	

*On December 24th, 1914, A. Morton, Treasurer of School Section No. 3 returned to T. L. Rowley the Township Treasurer, $135.00. A receipt was issued for this amount, the Ledger account of the School Section was credited, but no entry was made in the Municipal Cash Book.

If the total of such items not entered is deducted from the credit due the treasurer, the account will be:

Due Treasurer	$291 38
Receipts not entered	195 26
	$96 12

What is to be done with this amount is hard to say. If the Treasurer had kept separate the Municipal funds from his own personal cash he would have at once noticed any irregularities existing in his cash on hand.

There appears to be differences in the settlement of the Collector's Rolls.

It may be that this balance due the Treasurer should have been applied as collection on the Rolls, and it is difficult to understand that the Treasurer should be over in his cash without his knowledge.

As it is, the Treasurer for 1914 was also the Treasurer for the years 1915 and 1916, and when another Treasurer was appointed in 1917 he turned over to him the cash on hand as called for in the Cash Book. This amount as already stated was incorrect according to the entries contained therein.

The Treasurer when in discussion stated that as far as he was aware he did not owe the Municipality neither did he think there was any money due to him.

There is one exception, however. He acknowledges having on hand an amount of $21.67, paid to him by Eli Clark as a deposit on lots 15 and 16, Con. 12, to apply on land sale for 1912, 1913 and 1914. This item is contained among those that were not entered as receipts in the Cash Book.

Schools.

Accounts with the several School Sections as contained in the School Ledger were checked over.

Statements in concise form are attached hereto showing the transactions between the Municipality and the School Sections for the years 1911 to 1917.

Balance due the Schools as ascertained from the Ledger but with corrections made in the case of School Sections No. 2, No. 3, and No. 8, appear hereunder.

S. S. No. 2 in 1911, $50.00 was paid and not charged to the Section.

S. S. No. 3, three errors were made, details of which are subjoined to the account.

S. S. No. 8, payment in 1912 of $25.00 was not charged in Ledger.

Balances unpaid at 31st December, 1917:

School Section.	Amount.
No. 2	$75 39
No. 3	333 75
No. 4	353 02
No. 5	200 00
No. 6	224 45
No. 7	111 50
No. 8	162 48

It is evident that tax collections are made a year in advance for school purposes.

Payments to schools 1911 to 1917 were tabulated and appear among the statements.

Assessment Rolls.

Rolls for the seven years 1911 to 1917 were seen.

Assessor's affirmation as called for under the Act to be attached to the Roll only appeared in the Roll for the years 1911 and 1916.

The Rolls for the year 1913, 1915 and 1917 were badly marked up and greater care should be taken in their preparation so as to have a clear legible record.

Assessments as contained therein were contrasted with those appearing in the Collector's Roll and with the exception of those mentioned hereunder they were correct.

Assessments appearing in Assessment Roll but not entered in Collector's Roll.

Year.	Name.	Con.	Lot.	Amount.
1912	Welch, Fred.	20	Pt. 25	100 00
1913	Non-resident	22	22	275 00
1914	Nelson, Andrew	19	22	135 00
1916	Adam Thompson	11	6	125 00

Alterations as contained in the Minutes of the Court of Revision were checked with the respective items in the Roll. These were few in number and it was seldom that any assessment was changed.

Debentures.

In the period under review there has been four issues of debentures to deal with. These were for School Sections No. 3, No. 5, No. 6, and No. 8.

No. 8 was the only issue actually made during the period, the others were issued prior to, and expired within this time.

Statement of debenture issues is included.

By-laws authorizing the issues, the equal annual payments of interest and principal and the annual redemption of same were checked and found correct.

Collector's Rolls.

Reconciliation of the Rolls for the several years has been made and are contained among the other statements following this report.

Summary of the differences in the settlement of the Rolls appears hereunder, and these amounts depend on the markings in the Rolls being correct. There does not appear to be any way to check the individual receipts and to overcome this in the future a form of Collector's receipt and Cash Book is included for adoption.

Rolls have not been properly returned and at any time there has been Rolls for four different years in the hands of the respective Collectors.

Some of the items drawn off the Rolls as not marked paid may have been paid or should be adjusted. These will have to be dealt with immediately and cleared up, either by return to the County Treasurer or written off by resolution of Council if they are duplicate assessments, etc.

The discount allowed has not been clearly marked on the Rolls and there does not appear to have been any collection of interest, even when the taxes have been collected two or three years later.

Clerk's certificates were seen for the years.

1911	Alfred G. Tate.
1912	Alfred G. Tate.
1913	Alfred G. Tate.
1914	Fred L. Rowley.
1915	Fred L. Rowley.
1916	Fred L. Rowley.
1917	C. H. Bedford.

Collector's oath was not attached to the Rolls for the years 1911 to 1916. In the case of the year 1917 it was appended.

In the year 1915, Alex. Campbell, Con. 22, lots 22-23, assessment entered as $225.00 instead of $255.00.

In the year 1915, John Connaghan, Con. 21 and 22, lots 7-9, assessment of $225.00 reduced to $150.00, without any apparent authority.

Collector's Roll.	Amount. Short.	Over.
1911	$7 26	.....
1912	59 57	.....
1913	.....	$3 21
1914	.....	63 12
1915	130 47	.....
1916	25 02	.....
1917	.....	6 66
	$222 32	$152 99

Extracts from the pamphlet issued by the Provincial Municipal Auditor are best suited to describe the duties resting on the officials in connection with the Collector's Roll.

There are no duties devolving upon the Municipal official more important in results, than those of the Collector of Taxes, yet they are often misunderstood, often neglected, and seldom receive effective supervision. Diligent collection and prompt return of taxes are important; clear and accurate accounts of moneys received and returned are equally important. A system of book-keeping which may be simple, and at the same time methodical and reliable, is a protection to the Collector against unjust suspicion and possible financial loss.

The Collector is appointed as provided by R.S.O. 1914, chap. 192, sec. 230. He like the Assessor, must not be a member of the Council nor Clerk nor Treasurer of the municipality.

The Clerk shall attach to the Roll a certificate signed by him according to the following form:

I do certify that the within, or "annexed" or "attached" (as the case may be) Roll is the Collector's Roll prepared according to the provisions of the Assessment Act for (naming the Municipality or Ward) for the year," and shall deliver the Roll so certified to the Collector on or before 1st October or such date as may be prescribed by by-law of the municipality.

When the Roll has been handed to the Collector, an account should be opened by the Treasurer in his Ledger, charging the Collector with the total amount of taxes levied upon his Roll.

Upon receipt of his Roll, Collector must call at least once on the person taxed at his usual place of business or residence if within the Municipality, and demand payment of taxes, or he shall give to such person a written or printed demand, or deliver, or cause same to be delivered to him or for him at said place of business or residence, or upon the premises in respect to which the taxes are payable; in cities, towns, townships and villages, may mail such notice if so authorized by by-law of the municipality.

The Collector shall forthwith make or cause to be made an entry on his roll of the date of giving such demand or notice and person making such entry shall initial same.

The Collector of every city, town and village is required to pay over to the Treasurer his collections weekly; and the Collector of a township must do so every two weeks.

Collector shall return his Roll to Treasurer on or before the 14th of December in each year or on such day in next year not later than 1st February as Council may appoint. In towns and villages when council has by by-law provided that the Assessment shall be made between the 1st July and 1st October under provisions of Section 56 to 60 of the Act the Collector shall return his Roll to the Treasurer on or before 30th April in the second year following the completion of the Assessment Roll or on such earlier date in that year as the Council may appoint. In case the Collector shall make default or neglect to collect any part of taxes within the required time the Council may, by resolution, authorize the Collector or some other person to continue the levy and collection of unpaid taxes, but such resolution is not to affect the duty of the Collector nor the liability of his sureties.

At or before the return of his Roll every Collector shall make oath in writing that the date of every demand of payment or notice of taxes required by section 107 or 108 and every transmission of statement and demand of taxes required by section, entered by him in the Roll has been truly stated therein. Every other person who has delivered or mailed a notice pursuant to section 104, 106, or 108 shall in like manner at or before the return of the Roll make oath that the date of the delivery, or mailing of every notice by him has been truly stated in the Roll. Every such oath may be according to Form 10 and shall be written on or attached to the Roll and may be taken before the Treasurer or before any of the persons mentioned in section 228.

If any of the taxes mentioned in the Collector's Roll remain unpaid and the Collector is not able to collect the same, he shall deliver to the Treasurer of his Municipality an account of all taxes remaining unpaid, and in such account shall show opposite to each assessment the reason why he could not collect the same by inserting in each case the words "Non-resident" or "Not sufficient to distrain," or "Instructed by Council to return not collected," or as the case may be. He shall at the same time furnish the Clerk of the municipality with a duplicate of such account and Clerk upon receiving same shall mail a notice to each person appearing on the roll with respect to whose land any taxes appear to be in arrear for the year.

Faithful observance of the provisions of this section would ensure prompt discovery of any errors made in the Collector's returns. It appears, however, in many cases to have been ignored, and it is surprising that it should be so. If the Collector should omit to give credit on the Roll for any payment to him, the account to the Clerk and the notice by him to each ratepayer appearing to be in arrear, would at once lead to the detection of such omission.

Auditors should check the account sent to the Clerk with the Collector's Roll, and if they find that the provisions of this section have not been observed they should make to the Council a special report of the facts.

Upon making oath before the Treasurer that the sums mentioned in such account remain unpaid and that he has not upon diligent enquiry been able to discover sufficient goods or chattels subject to distress under Section 109, whereon he could levy the same or any part thereof, the Collector shall be credited with the amount not realized.

The intention of the Assessment Act is that the Collector shall collect all collectible taxes and return only those which cannot be collected by distress. Notwithstanding anything in the Assessment Act contained, the Council of a local municipality may, by resolution, direct that during the present war and for six months thereafter, arrears of taxes in the municipality may not be collected by

distress and sales of goods and chattels, and that all arrears of taxes may be collected under the Assessment Act in the same manner as if there were no goods and chattels liable to distress and sale.

The Assessment Roll, as finally revised and the Collector's Roll should be carefully compared, the one with the other, item by item, and the totals should agree. As a matter of convenience, it is advisable that corresponding items should have the same serial number in both Rolls, and that the pages should also correspond, commencing and ending as far as possible in each Roll with like items.

Auditors should compare the receipts of taxes as shown by the Treasurer's Cash Book with the Collector's receipts, and the payments as shown by the Collector's Roll, and also with the credits in the Collector's accounts in Treasurer's Ledger. All percentages added under any By-law should be checked, and care taken that these are not included in the credits in Ledger, or if they are so included, the percentages should also be debited to the Collector in the account.

All discounts allowed, all items where there is not sufficient property to distrain and Collector has made oath to that effect, should be credited to Collector in Ledger Account.

Auditors should see that all instructions from Council have been authorized by resolution.

In many municipalities it has been a custom to extend the time for return of Collector's Roll beyond the 1st day of February and in some cases for a year and more.

Rolls for several years have been allowed to remain in the hands of Collectors; municipalities have been borrowing money and paying interest when taxes were in arrear to an amount more than sufficient to meet all requirements of the municipality. A very little consideration will convince members of Council that these are very unbusiness-like methods. The ten per cent. which should be added by the Treasurer upon all balances shown by his books on the 1st of May in each year, cannot, of course, be added upon arrears which have not been returned to him. When such conditions exist it is the duty of the Auditors to call attention thereto and to the amount lost to the Municipality.

In the case of your municipality interest has not been added because no returns have been made to the County Treasurer until the year 1916.

The Rolls have not been returned and taxes are being collected at their face amount although payments are being received three or four years in arrears.

The Roll for the year 1918 is now in the Collector's hands, its return must be made in accordance with the foregoing procedure. The other Rolls must also be returned in proper form.

Tax Arrears.

Within fourteen days after the time appointed for the return and final settlement of the Collector's Roll, and before 8th April in each year, the Treasurer of every township and village must furnish the County Treasurer with a statement of all unpaid taxes and school rates with description of lands, and statement of unpaid arrears of taxes (if any), of arrears of taxes paid on lands of non-residents which have become occupied. The County Treasurer is not bound to receive any such statement after 8th April in any year. R.S.O. 1914, Chap. 195, Sec. 122.

After the Collector's Roll has been returned to the Treasurer of a township or village and before such Treasurer has furnished to the County Treasurer the statement mentioned in Sec. 122, arrears of taxes may be paid to such local

Treasurer, but after the said statement has been returned to the County Treasurer no more money on account of the arrears then due shall be received by any officer of the municipality to which the Roll relates. The collection of arrears shall thereafter belong to the County Treasurer alone, he shall receive payments and give receipts therefor, specifying the amount paid, for what periods, the description of the land and date of payment.

County Treasurer or Treasurer of any municipality having power to sell lands, may from time to time receive part payment of any arrears but no such payment shall be received after land has been advertised for sale.

The Treasurer of Town and County shall furnish the Clerk of local municipality a list of all taxes in arrears for the three years next preceding 1st January. This list must be furnished before 1st February in every year, or 15 days before such other date as may be fixed by by-law for the Assessor to begin to make his Assessment Roll. R.S.O. 1914, Chap. 195, Sec. 127.

The Clerk must keep the above list in his office and furnish the Assessor with a copy as soon as he is appointed. The Assessor, after making proper investigation and notification, shall enter on his list "occupied or built upon and parties notified" or "not occupied" or "incorrectly described" as the case may be, and shall verify the list under oath and return the list to the local Clerk. The Clerk, after examination and comparison with Assessment Roll, shall file the list in his office and shall forthwith furnish the Treasurer of the Municipality or the County Treasurer, as the case may be, with a true copy of the list certified and under the seal of the Corporation. R.S.O. 1914, Chap. 195, Sec. 128.

On or before 15th September (or in cases provided for by Section 56 to 60 of the Act, one month before the date fixed for the completion of Collector's Roll) the County Treasurer or the Treasurer of the municipality, as the case may be, shall return to the local Clerk an account of all arrears of taxes due in respect of lands which have become occupied or built upon, and such clerk shall add such arrears to the taxes assessed against such lands and include the same in the Collector's Roll for the current year. R.S.O. 1914, Chap. 195, Sec. 129.

On the 1st May in every year the local Treasurer or County Treasurer, as the case may be, shall add ten per cent. to the arrears then due in respect of any parcel of land. In municipalities where percentage has been added, the Treasurer shall add only sufficient to make up ten per cent. R.S.O. 1914, Chap. 195, Sec. 140.

In the year 1916 certain returns were made to the County Treasurer, statement of such returns is included.

Arrears as drawn from the Collector's Rolls for the several years contrasted with the actual returns made to the County Treasurer is shown in the following statement.

It is for the Municipal Council to enquire into and determine what is to be done with those taxes uncollected and not returned to the County Treasurer.

On the lists of taxes not marked paid on Roll, there appears an "R" against all those returned, the remainder are to be dealt with.

Year.	Arrears per rolls.	Returned to County Treasurer.	To be dealt with.
1911	$158 31	$43 81	$114 50
1912	260 42	57 59	202 83
1913	155 29	66 10	89 19
1914	234 48	69 07	165 41
1915	183 61	5 29	178 32
1916	387 85	67 50	320 35
1917	277 42	.....	277 42
	$1,657 38	$309 36	$1,348 02

The following items have been returned to the County and are included among the list of those taxes not marked paid.

Name.	Con.	Lot.	Year.	Amount.
Connaghan, Mandy	21-22	4-4	1913	$1 76
Bowers, John	20	7-8	1913	8 12
Wheeler, James	22	5-6	1913	1 00

The Treasurer is already in possession of an Arrears Roll. This should be entered up, so that he has a permanent record of all arrears and not depend on the County Treasurer for all his information.

Payments.

Those for schools are not authorized in the minutes, but receipts signed by Secretary of School Sections were seen for all payments.

In a few cases receipt forms were used and warrants signed by the Reeve and Clerk were not issued.

A few warrants for small amounts were not properly endorsed by the party receiving payment.

Warrant for payment to John Tinney $5.00, on 15th December, 1915, was not seen.

In several cases warrants were not signed by the Reeve and in a few instances absence of the Clerk's signature was noted. Payments, however, were authorized in the Minutes.

Receipts for payment of $20.00 to John Schickler, School Section No. 5, on 28th June, 1916, was not seen.

On June 1, 1918, Warrant No. 80, payment to V. E. Ottaway for attending audit, and postage $7.60 is entered in Cash Book, page 117. Vouchers was seen and authority for payment is contained on page 3 of the Minute Book.

On June 14, 1918, this payment is entered again as Postage and Board of Health. There does not appear to be any authorization nor was any voucher seen. It is apparently a duplicate entry.

Cash Book for the year 1914 contained a great many erasures. Pages Nos. 92 and 93, were re-written and it may be due to the many changes made that the Auditor's omitted to credit the Treasurer with certain payments made to school sections.

By-law No. 530 authorizes the Treasurer to deposit funds into the Bank of Nova Scotia at Bancroft and issue cheques thereon when making payments. This is the best method as it obviates to a great extent the making of mistakes and leaves a clear record behind of the transactions, which cannot be had when the dealings are only in cash.

Officials.

There has apparently been a great many changes in the officials and none of them have retained their positions long enough to familiarize themselves with the requirements of the several Acts and their duty in seeing them carried out.

It would appear better that the books and papers be centralized. An office could be rented in the village. The safe moved there and all documents fyled therein.

Someone with clerical abilities could be employed as Clerk and Treasurer, and certain office hours designated, in which time the official would be in attendance at the office to deal with all communications, receive cash and make payments.

A vast improvement can be made in the appearance and wording of Minutes and By-laws. While the Collector's Rolls and Cash Book certainly should receive more attention.

Those for several years past were perused and several that are not in complete form are listed hereinunder.

Amendment to By-law No. 468, on page 246, dated June 4, 1914, was not signed nor sealed.

By-law No. 470, re Tax Levies, 1914, was not complete in details of levies to be made.

By-law No. 467, to appoint Assessor for 1914, was not signed nor sealed. Assessor's name was not mentioned.

By-law No. 485, to appoint Collector, but no one named for this position.

By-law No. 520, to appoint Collector, no names mentioned however.

By-laws are passed authorizing the payment of accounts. Authority for payment is also contained in the minutes.

Minutes.

Board of Health minutes were seen dated 13th April, 1918, and 11th October, 1918. Previous minutes are dated in the year 1901 and there are no other entries in the intervening period.

Certain of the minutes were not signed, these are enumerated below:

Minutes, 6 July, 1912—Not signed.
" 12 January, 1914—Not signed by Reeve.
" 7 February, 1914—Not signed by Reeve.
" 20 August, 1914—Not signed.
" 15 December, 1914—not signed by Reeve.
" 10 January, 1916—Not signed.
" 12 February, 1916—Not signed.
" 27 May, 1916—Not signed.
" 15 December, 1916—Not signed.
" 8 January, 1917—Not signed by Clerk.
" 4 April, 1917—Signature of Reeve, not his handwriting.
" 22 February, 1918—Not signed by Reeve.

Bonds.

Treasurer's bonds were all seen with the exception of the renewal receipt for the year 1912. Details of bonds are shown hereunder.

Collector's bonds were gone over and the main points of these are listed. The bond for the year 1911 was not dated nor witnessed.

Total collections to be made on the Roll for 1917 are about $2,700.00 and it is for the Council to decide whether the bond of $500.00 is a sufficient amount for this purpose.

TREASURER'S BOND.

Alfred G. Tate—No. 702660, London Guarantee & Accident Co., Ltd.
$500.00. Premium, $5.00. Expires, April 15, 1908.
Renewal 71760 " 15, 1909.
Renewal 74833 " 15, 1910.
Renewal 77985 " 15, 1911.
Not seen. Not seen.
Renewal 81366 April 15, 1913.
Frederick Levi Rowley—No. 770832, London Guarantee & Accident Co.
$500.00. Premium, $5.00. Expires, April 1st, 1914.
Renewal 94591 " 1st, 1915.
Renewal 98170 " 1st, 1916.
George Lewis, Sr., Bondsmen, George Lewis, $900.00. Feb. 17, 1917.
William Lewis.
Thos. Lewis.

TOWNSHIP OF CARDIFF.

Collector's Bonds.

Tax Collector.	*Bondsmen.*	*Amount.*	*Date.*
Alexander Southworth	A. Southworth Alex. Evans J. Moore	$500.00 Pay over every two weeks.	30 Sept., 1909. Expires, 14 Dec., 1909.
Alexander Southworth	A. Southworth Alex. Evans J. Moore	$500.00 Pay over every month.	28 Oct., 1910. Expires, 1 Feb., 1911.
Alexander Southworth (Not dated) (Not witnessed)	A. Southworth Alex. Evans W. M. Patterson	$500.00 Pay over every month.	1911. Expires, 1 Jan., 1912.
Alexander Southworth	A. Southworth Alex. Evans Wm. M. Patterson	$500.00 Pay over every fortnight.	3 Dec., 1912. Expires, 14 Dec., 1912.
Alexander Southworth	A. Southworth Alex. Evans W. M. Patterson	$500.00 Pay over every fortnight.	7 Oct., 1913. Expires. 14 Dec., 1913.
Alexander Campbell	London Guarantee & Accident Co., No. 771244	$500.00 Prem., $7.50.	15 Oct., 1914. Expires, 15 Oct., 1915.
Alexander Campbell	Alex. Nicholl N. H. Rowley Alex. Campbell	$300.00 Pay over every two weeks.	Dec., 1915. Expires, 15 August, 1916.
Roland Peel	Robert Peel Fred. L. Rowley Roland Peel	$300.00 Pay over every month.	1 Jan., 1917. Expires. 15 Aug., 1917.
Valentine E. Ottaway	London Guarantee & Accident Co., No. 773351	$500.00 Premium, $7.50.	1 Nov., 1917. Expires, 1 Nov., 1918.

TOWNSHIP OF CARDIFF.

Ledger.

Ledger should be kept by the Treasurer wherein record should be made of transactions affecting the municipality.

Tax Collector should be debited therein, with the total amount of taxes to be collected according to the Roll. Credit would be made to the several levy accounts. For instance, each of the School Sections, the County, Provincial Government, General School, and other levies would be credited. The cash received from the Tax Collector would be entered in the Cash Book and credited to his account in the Ledger. Upon the Roll being returned the taxes uncollected according to the sworn statement of the Collector, would be credited to his account, thus leaving no balance thereto.

Payments to the County Treasurer, School Section, and Provincial Government would be debited to the respective levy accounts. At the year end the Ledger would therefore disclose what balances remained unpaid. There is no debenture book and as there is only one issue outstanding the details of this issue could be contained in the Ledger.

Tax Collector's Receipt.

There is none now in use and the Roll only bears the marking in reference to the payment. Form as submitted herewith should be printed in duplicate, and numbered consecutively and no moneys should be received by the Collector, without the issue of one of these receipts. The duplicate will be retained for audit and other purposes.

Tax Collector's Receipt Summary.

This form is for entering up of all cash received as shown on the duplicate receipt. It will contain receipt number, date of payment, discount allowed, or interest imposed. The date and amount of the deposit or payment over to the Treasurer will be entered in the bank deposits column.

Tax Collector's Roll.

Stock book ruling of this Roll is not well arranged as far as the provision for showing cash received, date of payment, etc., is concerned. The only way to overcome the difficulty in connection with the Collector's Roll, is to have one specially printed.

Form submitted herewith is an extension of the stock ruling. Columns are provided for the Treasurer to show the cash received by him, the date of receipt, and interest added. Other columns are provided to show the cash received by the Collector, the date of receipt and discount allowed.

A final column is for the arrears to be entered that are carried forward to the next year.

TAX RECEIPT

No.....

TOWNSHIP OF CARDIFF

Date.....191.....

Received from.....

The sum of..... 100 Dollars

Roll No.	Lot No.	Block	Plan	Concession	Amount	
				Less Discount...		
				Add Interest....		
				Total.....		

.....Collector

TAX COLLECTOR'S CASH BOOK

TOWNSHIP OF CARDIFF

Year 19.....

Roll No.	Date	Discount Allowed	Cash Received		Paid to Treasurer	
			Interest	Current Taxes	Date	Amount

TAX ROLL

TOWNSHIP OF CARDIFF

Total Taxes	Paid to Collector		Discount Allowed	Paid to Treasurer		Interest Added	Arrears Forward
	Date	Amount		Date	Amount		

OFFICIAL RECEIPT FORM.

TOWNSHIP OF CARDIFF.

TREASURER'S OFFICIAL RECEIPT No. .....

$.....__/100 Date.....of.....191....

RECEIVED FROM .....

The sum of .....__/100 Dollars

Being for .....

.....

Cash Book Folio .....

.....
Treasurer.

YEARLY RATES.

The Council of every municipality shall in each year assess and levy on the whole rateable property within the municipality a sum sufficient to pay all debts of the corporation, whether of principal or interest *falling due within the year,* but shall not assess and levy in any year more than two and one-half cents on the dollar on the assessed value of such property according to the last revised Assessment Roll, exclusive of school and local improvement rates.

It would appear that in the case of your municipality the taxes are raised a year ahead. There is sufficient cash on hand and uncollected taxes at the end of the past several years to equal the total taxes to be collected on that year's Roll.

Until the year 1918 there has not been any need for borrowing any money and there should have been no need then if the collection of taxes had been properly attended to. Tax arrears not returned to County Treasurer amounted to $1,348.02 at the 17th August, 1918.

AUDITORS.

Auditors have for their guide the booklet entitled, "Suggestions touching the Duties of Officials," perusal of which will clearly show them the scope of their work and responsibilities. Special instructions to them on page four need close attention.

CONCLUSION.

Settlement of the disposition of all tax arrears should be made at once. Collect those that are collectible, write off those that are mistakes and return the others to the County Treasurer.

Appointment of someone to give adequate time to the affairs of the municipality is essential.

Report and statements are respectfully submitted.

HENRY GLOVER,
For Provincial Municipal Auditor.

Cost of this audit, $333.20.

TOWNSHIP OF CARDIFF.

CASH STATEMENT, 1ST JANUARY TO 17TH AUGUST, 1918.

Receipts.

Cash in hands of Treasurer, 1st January, 1918	$410 31	
Cash received from Collector, 1914 Roll	1 71	
Cash received from Collector, 1915 Roll	41 97	
Cash received from Collector, 1916 Roll	7 41	
Cash received from Collector, 1917 Roll	1,373 02	
Railroad Tax	19 44	
Loan—Mrs. G. Lewis	250 00	
		$2,103 86

Payments.

Salaries and allowances	$215 90	
Stationery and printing	67 33	
Roads and bridges	133 50	
County rates	100 00	
School Section No. 2	100 00	
" " 3	275 00	
" " 4	320 00	
" " 5	200 00	
" " 6	200 00	
" " 7	100 00	
" " 8	115 48	
Board of Health	5 40	
Debenture S. S. No. 8	24 57	
Miscellaneous	20 07	
Cash in hands of Treasurer, 17th August, 1918	226 61	
		$2,103 86

TOWNSHIP OF CARDIFF.

Summary of Collector's Rolls for the Years 1911-1917.

	Year 1911	Year 1912	Year 1913	Year 1914	Year 1915	Year 1916	Year 1917
County Rate	$251 29	$282 60	$221 31	$258 37	$296 50	$348 47	$394 19
Township Rate	362 64	292 29	150 83	438 51	376 40	396 31	404 12
Statute Labor	101 00	100 50	109 50	112 50	69 00	91 00	232 55
Dog Tax	99 00	.....	.....	.....	.....	.....	.....
School, General	779 37	775 98	754 27	869 71	874 26	965 70	853 07
School No. 1	.....	.....	.....	.....	.....	.....	.....
2	31 07	24 77	44 28	28 20	32 07	46 72	50 52
3	139 75	122 73	119 85	129 15	163 67	184 91	176 04
4	233 06	.....	119 53	181 87	132 71	174 57	186 64
5	.....	34 50	53 10	102 78	51 45	112 64	100 91
5 Deb.	77 84	82 94	76 78	77 78	74 12	.....	.....
6	73 08	34 89	37 04	42 27	91 20	210 99	124 63
6 Deb.	75 43	71 74	69 47	46 71	.....	.....	.....
7	67 43	31 45	69 90	70 74	69 64	127 22	91 50
8	32 79	41 64	59 42	53 94	24 00	30 30	44 99
8 Deb.	.....	.....	25 82	26 97	26 43	25 25	24 85
	$2,323 75	$1,896 03	$1,911 10	$2,439 50	$2,281 45	$2,714 08	$2,684 11

TOWNSHIP OF CARDIFF.

STATEMENT OF UNPAID TAXES RETURNED TO COUNTY TREASURER FOR THE YEAR 1916.

Name of Party Assessed	Lot	Concession	Arrears of Taxes from former years Years	Amount	Total Taxes 1916	Total Amount Due	Remarks Why not Collected
Harvey Neil	27-28	23	1911	$2 43	.....	$2 43	Non-resident.
Harvey Neil	N. pt. 28	23	....	.....	$5 69	5 69	Non-resident.
H. Strudwick	21-22	14-15	1911	13 32			
			1912	16 28			
			1913	13 95	15 63	59 18	Non-resident.
Frank Minnes	18	22	1912	8 56	.....	8 56	Non-resident.
Frank Minnes	10	21	....	.....	5 68	5 68	Non-resident.
Mandy Connaghan	4-4	21-22	1911	13 00			
			1912	11 34			
			1913	1 76	.....	26 10	Resident.
John Bowers	7-8	20	1913	8 12	.....	8 12	Resident.
Joseph Godfrey	N. ½ 19	22	1912	7 70			
			1913	4 77	.....	12 47	Resident.
Charles Bowen, Jr.	17-17	19-20	1914	11 75	.....	11 75	Non-resident.
Abel Gould	W. pt. 31	6	1914	8 71	12 23	20 94	Resident.
R. J. Howlett	S. pt. 3	21	1913	7 54			
			1914	9 05	5 65	22 24	Non-resident.
James Scott	6-6	19-20	1913	14 48			
			1914	9 05			
			1915	5 29	12 72	41 54	Non-resident.
Charles Bowen, Sr.	17	22	1911	6 25			
			1912	6 86	.....	13 11	Resident.
James Wheeler	5-6	22	1911	8 81			
			1912	6 85			
			1913	1 00			
			1914	10 51	9 90	37 07	Non-resident.
James Wheeler	4-5	20	1913	14 48			
			1914	20 00	.....	34 48	Non-resident.
				$241 86	$67 50	$309 36	

TOWNSHIP OF CARDIFF.

Reconciliation of Collector's Roll, for the Year 1911.

To taxes to be collected per 1911 Roll	$2,323 75	
By cash collected on taxes, 1911		$556 57
1912		1,285 25
1913		163 38
1914		152 98
By taxes not marked paid on Roll		158 31
By difference		7 26
	$2,323 75	$2,323 75

Taxes Not Marked in Roll.

Gabel, Wm., con. 9, lots 15-16	$9 50	
Reynolds, John, con. 10, lot 17	9 56	
Peters, Mrs. Mary, con. 20, lot 23	10 63	
Chrysler, G. A., con. 19, lot 16	4 73	
Neil, Harvey, con. 23, lots 27-28	2 43	R
Bowen, Elizabeth, con. 22, lot 17	6 25	R
Townsend, Manson, con. 22, lot, S. ½ 19	6 53	
Tripp, Nicholas, con. 21, lot 8	2 94	
Wheeler, James A., con. 22, pt. lots 5-6	8 81	R
Strudwick, H., cons. 21-22, lots 14-15	13 32	R
Wilson, James, con. 2, lot 32	7 55	
Tinney, Chas., con. 1, lot 32	10 73	
Fraser, Robt., Jr., con. 6, lots 21-22 (dog tax)	3 00	
Anderson, Lauchlin, con. 6, lot 20	14 30	
Vance, James, con. 10, lot 26	10 00	
Watson, Joseph, cons. 10-12, lots 29 to 32	9 01	
Conaghan, Mandy, cons. 21-22, lots 4-4	13 00	R
Schofield, A. G., con. 22, lot 3	8 01	
Dennis, J., con. 20, lot 3	8 01	
	$158 31	

TOWNSHIP OF CARDIFF.

Reconciliation of Collector's Roll, for the Year 1912.

To taxes to be collected per 1912 Roll	$1,896 03	
To refund, A. Southworth, January 23, 1914, overpaid on Roll	64 01	
By cash collected on taxes, 1912		$1,015 50
By cash collected on taxes, 1913		624 55
By taxes not marked paid in Roll		260 42
By difference		59 57
	$1,960 04	$1,960 04

Taxes Not Marked Paid in Roll.

Gabel, Wm., con. 9, lots 15-16	$9 16	
Hogan, Wm., con. 18, lot 19	7 97	
Bowers, Robt., con. 18, lots 18-19	5 85	
Drury, Robt., con. 18, pt. lots 21-22	7 35	
Covert, Thomas, con. 22, lots 24-25	4 41	
Bowen, Elizabeth, con. 22, lot 17	6 86	R
Townsend, Manson, con. 22, ½ lot 19	1 70	
Godfrey, Joseph, con. 22, pt. lot 19	7 70	R
Canaghan, John, cons. 21-22, lots 7-9	14 84	
Millan, Wm., cons. 19-20, lots 9-10	14 84	
Conaghan, Thomas, con. 22, lot 6	7 42	
Mims, Frank, con. 22, lot 18	8 56	R
Kelly, Dan., con. 21, lot 11	8 29	
Wheeler, James, con. 22, lot 6	6 85	R
Strudwick, H., con. 14-15, lot 21-22	16 28	R
Wilson, James, con. 2, lot 32	7 62	

Anderson, J. G., con. 6, lot 23-24	13 24
Tinney, Edward, con. 1, lot 30	14 06
Tinney, Charles, con. 1, lot 31	11 24
Anderson, Lauchlin, con. 6, lot 20	14 67
Creighton, Matthew, con. 10, lots 29-30	20 81
Lake, W. H., con. 11, lot 31-32	20 16
Conaghan, Mandy, cons. 21-22, lots 4-4	11 34 R
Schofield, A. G., con. 22, lot 3	8 76
Paradis, Michael, con. 21, lot 5	10 44
	$260 42

TOWNSHIP OF CARDIFF.

Reconciliation of Collector's Roll, for the Year 1913.

To taxes to be collected per 1913 Roll	$1,911 10	
By cash collected on taxes, 1913	.....	$896 44
By cash collected on taxes, 1914	.....	942 58
By taxes not marked paid on Roll	.....	155 29
To difference	83 21	
	$1,994 31	$1,994 31

Taxes Not Marked Paid in Roll.

Watson, John, con. 4, lot 13	$4 24
Mooney, James, con. 7, lot 13-14	5 05
Gabel, William, con. 9, lots 15-16	9 72
Carter, John, con. 10, W. ½ lot 11 (Inc. in A. Evans tax)	3 04
Bowen, Stanley F., con. 18, lot 15	3 24
Evans, Geo. A., cons. 19-17, lots 22-20	10 75
Ayotte, Bert., con. 20, pt. lot 25	2 63
Deer Lake, J. S. Co., cons. 21-20, pt. lots 25-26	5 77
Godfrey, Joseph, con. 22, N. ½ lot 19	4 77 R
Kelly, Dan., con. 21, lot 11	7 03
Shtrudwick, H., cons. 21-22, lots 14-15	13 95 R
Anderson, J. G., con. 6, lots 23-24	9 08
Anderson, Lauchlin, con. 6, lot 20	13 35
Tinney, Chas., con. 1, lot 32	8 63
Wilson, James, con. 2, lot 32	8 60
Scott, James, cons. 19-20, lots 6-6	14 48 R
Howlett, R. J., con. 21, S. ½ lot 3	7 54 R
Dennis, Wm., con. 20, lot 3	8 94
Wheeler, J. A., con. 20, lots 4-5	14 48 R
	$155 29

TOWNSHIP OF CARDIFF.

Reconciliation of Collector's Roll, for the Year 1914.

To taxes to be collected per 1914 Roll	$2,439 50	
By Cash collected on Taxes, 1914	.....	$1,091 74
1915	.....	663 83
1916	.....	430 85
1917	.....	80 01
1918	.....	1 71
By taxes not marked paid in Roll, per list	.....	234 48
To difference	63 12	
	$2,502 62	$2,502 62

Taxes Not Marked Paid in Roll.

Gabel, William, con. 9, lots 15-16	$12 63
Mason, James C., con. 7, lots 7-8	13 69
Thompson, Adam, con. 12, lots 15-16	9 43
Andrews, William, con. 18, lots 24-25	25
Drury, Robert, con. 18, pt. lots 21-22	13 13

Bowen, John, con. 18, lot 20	10 13
Bowen, Charles, cons. 19-20, lots 17-17	11 75 R
Bowen, Stanley F., con. 18, lot 15	4 05
Peters, Emery, con. 20, lots 23-24-25	18 93
Scott, Archie M., con. 21, lot 10	8 86
Bowers, John, con. 20, lots 7-8	23
Kelly, Dan., con. 21, lot 11	6 52
Millen, William, cons. 19-20, lots 9-10	7 97
Tinney, Charles, con. 1, lot 32	11 46
Gould, Abel, con. 6, lot 31	8 71 R
Anderson, Lauchlin, con. 6, lot 20	17 40
Wilson, James, con. 2, lot 32	14 00
Boomhour, Marvin, cons. 10-11, pt. lots 7-28	5 20
Wheeler, James, cons. 20-22, lots 4-5-5-5	30 51 R
Scott, James, con. 20, lot 6	9 05 R
Howlett, R. J., con. 21, S. ½ lot 3	9 05 R
Dennis, Wm., con. 20, lot 3	10 58
Schofield, A. G., con. 22, lot 2	85
	$234 48

TOWNSHIP OF CARDIFF.

Reconciliation of Collector's Roll, for the Year 1915.

To taxes to be collected per 1915 Roll	$2,281 45	
To overpayment, T. J. Lowery, con. 20, pt. lot 25	2 00	
To cash paid discount on taxes	56 64	
By cash collected on taxes, 1915		$1,132 86
" " " 1916		570 93
" " " 1917		177 09
" " " 1918		41 97
By discount allowed		103 16
By taxes not marked paid in Roll		183 61
By difference		130 47
	$2,340 09	$2,340 09

Taxes Not Marked Paid in Roll.

Gabel, William, con. 9, lots 15-16	$11 57
Mason, James C., con. 7, lots 7-8	13 17
McWilliams, J. B., con. 8, lots 14-15	13 39
Reynolds, John, con. 10, lot 17	8 07
Carter, John, con. 10, pt. lot 11 (Assessed to A. Evans)	3 79
Bowen, Charles, con. 20, lot 17 (Assessed twice)	6 63
Estate of Exevery Peters con 20, pt. lot 25	4 55
Conaghan, Thomas, con. 21, lots 5-6	65
Connaghan, John, cons. 22-22, lots 7-9	8 45
Bowers, Wm., con. 20, lot 6	5 63
Kelly, Dan., con. 21, lot 11	5 63
Anderson, Lauchlin, con. 6, lot 20	12 98
Tinney, Charles, con. 1, lot 32	9 87
Wilson, James, con. 2, lot 32	7 53
Barns, George, con. 18, lot 1 (Rebate by Council on Bridge)	18 52
Scott, John, con. 19-20, lot 6-6	5 29 R
Dennis, William, con. 20, lot 3	6 63
Deer Lake J. S. Co., con. 21, pt. lot 25	7 12
Minns, Frank, cons. 21-22, lot 10-18	7 37
Peel, Roland, con. 23, lots 30-31	4 00
Tinney, Edward, con. 1, lot 20	4 01
Hilker, Adam, con. 1, lot 24	3 23
Hilker, Orvin, con. 1, lot 23	3 13
Donald, James, con. 1, lots 26-27-28	6 47
Tinney, John, con. 1, lots 29-30	5 93
	$183 61

DISCOUNTS ALLOWED IN EXESS OF 5 PER CENT.

Bourgeon, con. 19, lots 23-24	$1 10
White, Joseph, con. 19, lot 19	1 00
Lowry, T. J., con. 22, pt. lot 25	2 38
Succee, Fred., con. 20-22, lots 25-22-23	95
Bowers, John, con. 20, lots 7-8	1 00
Bates, N. J., con. 5-6, lots 27-28	24
	$6 67

TOWNSHIP OF CARDIFF.

RECONCILIATION OF COLLECTOR'S ROLL, FOR THE YEAR, 1916.

To taxes to be collected, per 1916 Roll	$2,714 08	
By cash collected on taxes, 1916	.....	$1,382 21
" " " 1917	.....	837 53
" " " 1918	.....	7 41
By cash discount allowed	.....	74 06
By taxes marked unpaid in Roll, per list	.....	387 85
By difference	.....	25 02
	$2,714 08	$2,714 08

TAXES NOT MARKED PAID IN ROLL.

Wheeer, James, con. 22, lots 5-6	$9 90 R
Scott, James, cons. 19-20, lots 6-6	12 72 R
Elliot, Robert, con. 20, lot 3	7 07
Connaghan, Geo., con. 20, lots 4-5	12 72
Howlett, R. J., con. 21, lot 3	5 65 R
Gobel, William, con. 9, lots 15-16	12 35
Mason, James C., con. 7, lots 7-8	12 08
Reynolds, Frank, con. 1, lots 2-3	11 22
Dixon, Robert, con. 4, lot 12	5 45
McWilliams, J. B., con. 8, lots 15-16	17 95
Pearce, Edgecombe, con. 16, lots 2-3	10 50
Throme, Horace, con. 16, lot 4	6 25
Burgon, Omer, con. 16, pt. lot 11	4 51
Toms, Amond con. 15, lots 14-15	3 01
Estate Exavier Peter, con. 20, pt. lot 25	5 69
Deer Lake, J. S. C., con. 21, pt. lot 25	5 40
Neil, Harvey, con. 23, pt. lot 28	5 69 R
Minns, Frank con. 21, lot 10	5 68 R
Bowen, Charles, con. 22, pt. lot 17	7 41
Kelley, Dan., con. 21, lot 11	5 41
Connaghan, Thomas, con. 21, lot 3	5 41
Strudwick, H., cons. 14 and 15, lots 21-22	15 63 R
Gould, Able, con. 6, pt. lot 31	12 23 R
Anderson, J. G., con. 6, lots 23-24	2 23
Anderson Lauchlin, con. 6, lot. 20	24 42
Hilker, Irwin con. 1 lot 23	4 78
Hilker, Adam, con. 1, lot 24	4 78
Donald, James, con. 1, lot 26-27-28	14 10
Tinney, John, con. 1, lots 29-30	12 42
Tinney, Edward, con. 1, lot 31	6 50
Tinney, Charles, con. 1, lot 32	16 30
Wilson, James, con. 2, lot 32	12 23
George, Edward, con. 6, lot 32	12 23
Hunter, Enoc, con. 5, lot 26	12 23
Boomhour, John, cons. 10-11, lots 23-28	14 00
Lake, W. H., con. 11, lots 31-32	36 15
Boomhour, Manley, con. 10-11, lots 27-28	15 55
	$387 85

TOWNSHIP OF CARDIFF.

Reconciliation of Collector's Roll for the Year 1917.

To Taxes to be collected per 1917 Roll	$2,684 11	
By Statute Labour not collected, H. Peel, Con. 23, Lots 28, 29		$1 50
By Statute Labour not collected, N. H. Rowley, Con. 22, 23, Lots 25, 26, 28		1 50
By Statute Labour not collected, Bruce Anderson, Con. 6, Lot 23		3 00
By Rebate, Jas. Ayotte, Con. 14-15, Lots 20, 20		75
By Rebate, Alex. Campbell, Con. 22, Lots 22, 23 (Error in Assessment)		4 90
By Rebate, John Conaghan, Con. 22 and 22, Lot 7		44
By Rebate Claimed, Edward Tinney, Con. 1, Lot 30		11.86
By Rebate Claimed, John Tinney, Con. 1, Lots 29, 30		9 72
By Rebate Claimed, Thos. Conaghan, Con. 21, Lot 6		7 64
By Cash Collected on Taxes in 1917		999 02
By Cash Collected on Taxes in 1918		1,373 02
By Taxes not marked paid in Roll		277 42
To Difference	6 66	
	$2,690 77	$2,690 77

Taxes Not Marked in Roll.

Dixon, Robt., Con. 4, Lot 12	$6 31
Cable, Wm., Con. 9, Lots 15-16	14 43
Kidd, W. J., Con. 5, Lot 12	9 79
Patterson, Jas., Con. 4-5-6, Lots 14-14-14	13 76
Mason, J. C., Con. 7, Lots 7-8	16 11
Reynolds, Frank, Con. 1, Lots 2-3	15 26
Pearce, Edgecombe, Con. 16, Lots 2-3	11 16
Thorne, Horace, Con. 16, Lot 4	7 49
Clark, Eli, Cons. 12-13, Lots 15, 15, 16	10 61
Reynolds, John, Con. 10, Lot 17	9 53
Bonsgone, Amos, Con. 16, N. pt. 11	5 38
Peters, Mary, Con. 20, pt. 25	6 54
Toms, Amos, Con. 15, Lot 14-16	11 97
Bowen, Chas., Con. 22, Lot 17	7 07
Kelly, Dan, Con. 21, Lot 11	8 59
Minns, Frank, Con. 21, Lot 10	5 59
Minnis, Frank, Con. 22, Lot 18	6 35
Edwards, Geo., Con. 6, Lot 32	12 66
Hunter, Enoch, Con. 5, Lot 26	12 32
Wilson, Jas., Con. 2, Lot 32	12 66
Creighton, Geo., Con. 9, Lot 13	7 69
Conaghan, Leo., Con. 20, Lot 4-5	14 63
Elliott, Robt., Con. 20, Lot 3	10 65
Scott, Jas., Cons. 19-20, Lots 6-6	16 77
Wheeler, Jas., Con 22, Pts. 5-6	15 25
Townsend, Manson, Con. 22, Lot 19	8 85
	$277 42

TOWNSHIP OF CARDIFF.

Payments to School Sections, Years 1911 to 1917.

	1911	1912	1913	1914	1915	1916	1917
S.S. 2	$150 00	$100 00	$250 00	$136 80	$148 70	.....	$175.00
3	325 00	239 75	225 00	275 00	300 00	250 00	298 31
4	398 00	333 06	100 00	252 50	212 50	240 00	290 00
5	100 00	150 00	112 50	179 63	210 75	219 30	183 06
6	119 19	270 00	168 95	250 00	65 00	420 00	201 00
7	77 40	275 43	170 00	211 25	233 44	153 65	256 54
8	.....	188 76	50 00	160 00	.....	.....	.....
	$1,169 59	$1,557 00	$1,076 45	$1,465 18	$1,170 39	$1,282 95	$1,403 91

TOWNSHIP OF CARDIFF.

School Section No. 2.

Year.	Township Grant.	Trustees' Requisition.	Total To Pay.	Paid.
1910	$118 00	$32 00	$150 00	.....
1911	112 50	30 55	143 05	150 00
1912	108 75	25 00	133 75	100 00
1913	120 00	40 00	160 00	250 00
1914	120 00	28 70	148 70	136 80
1915	101 00	30 00	131 00	148 70
1916	.....	44 39	44 39	.....
1917	75 00	50 00	125 00	175 00
	$755 25	$280 64	$1,035 89	$960 50
Balance unpaid 31st December, 1917				75 39
				$1,035 89

In the year 1911 payment on January 9th of $50.00 is not entered in School Ledger account. This amount being carried forward as an unpaid balance and paid later on. It has, however, been included among the amounts paid to School Section No. 2 and the balance is reduced thereby.

School Section No 3.

Year.	Township Grant.	Trustees' Requisition.	Total To Pay.	Paid.	Returned To Township.
1910	$150 00	$100 00	$250 00	$125 00	.....
1911	150 00	139 75	289 75	325 00	.....
1912	150 00	125 00	275 00	239 75	.....
1913	105 75	125 00	230 75	225 00	.....
1914	105 75	130 00	235 75	275 00	135 00
1915	150 00	156 00	305 00	300 00	.....
1916	150 00	174 56	324 56	250 00	.....
1917	150 00	175 00	325 00	298 31	.....
	$1,111 50	$1,125 31	$2,236 81	$2,038 06	$135 00
Less returned to Township, Dec. 24, 1914				135 00	
				$1,903 06	
Balance unpaid 31st December, 1917				333 75	
				$2,236 81	

In 1914 school was credited with $2.00 for use of school house, this was paid December 15, 1914, and not debited to ledger account.

In 1914 there was an error in additions, the total due school being added $10.00 less than it should be.

The balance carried down as owing school at 1 January, 1914, was $130.00 instead of $130.75.

These items have been adjusted in above balance.

School Section No. 4.

Year.	Township Grant.	Trustees' Requisition.	Total To Pay.	Paid.
1910	$150 00	$148 00	$298 00	$100 00
1911	150 00	233 06	383 06	398 00
1912	150 00	.....	150 00	333 06
1913	123 00	102 50	225 50	100 00
1914	150 00	178 00	328 00	252 50
1915	128 00	120 00	248 00	212 50
1916	150 00	162 02	312 02	240 00
1917	150 00	184 50	334 50	290 00
	$1,151 00	$1,128 08	$2,279 08	$1,926 06
Balance unpaid 31st December, 1917				353 02
				$2,279 08

School Section No. 5.

Year.	Township Grant.	Trustees' Requisition.	Total To Pay.	Paid.
1910	$78 40	$15 00	$93 40	$72 02
1911	93 00	.....	93 00	100 00
1912	117 00	30 00	147 00	150 00
1913	120 75	50 00	170 75	112 50
1914	120 75	100 00	220 75	179 63
1915	150 00	50 00	200 00	210 75
1916	150 00	102 36	252 36	219 30
1917	150 00	100 00	250 00	183 06
	$979 90	$447 36	$1,427 26	$1,227 26
Balance unpaid, 31st December, 1917				200 00
				$1,427 26

School Section No. 6.

Year.	Township Grant.	Trustees' Requisition.	Total To Pay.	Paid.
1910	$91 00	$25 00	$116 00	$46 81
1911	134 25	60 70	203 95	119 19
1912	150 00	35 00	185 00	270 00
1913	150 00	35 00	185 00	168 95
1914	150 00	65 00	215 00	250 00
1915	150 00	85 00	235 00	65 00
1916	150 00	200 45	350 45	420 00
1917	150 00	125 00	275 00	201 00
	$1,125 25	$640 15	$1,765 40	$1,540 95
Balance unpaid 31st December, 1917				224 45
				$1,765 40

School Section No. 7.

Year	Township Grant	Trustees Requisition	Total to Pay	Paid
1910	$74 90	$22 50	$97 40	$20 00
1911	108 00	67 43	175 43	77 40
1912	75 00	35 00	110 00	275 43
1913	101 25	70 00	171 25	170 00
1914	150 00	71 44	221 44	211 25
1915	150 00	65 00	215 00	233 44
1916	150 00	127 19	277 19	153 65
1917	150 00	91 50	241 50	256 54
	$959 15	$550 06	$1,509 21	$1,397 71
Balance unpaid at 31st December, 1917				111 50
				$1,509 21

SCHOOL SECTION No. 8.

Year	Township Grant	Trustees Requisition	Total to Pay	Paid
Balance due	$88 47	.....	$88 47	
1910	27 00	13 50	40 50	
1911	27 00	32 79	59 79	
1912	27 00	35 00	62 00	$188 76
1913	27 00	57 75	84 75	50 00
1914	27 00	30 44	57 44	160 00
1915	22 50	22 50	45 00	
1916	22 50	28 79	51 29	
1917	27 00	45 00	72 00	
	$295 47	$265 77	$561 24	398 76
Balance unpaid at 31st December, 1917				162 48
				$561 24

Payment, April 16th, 1912, of $25.00 not shown in ledger.

TOWNSHIP OF CARDIFF.

DEBENTURE ISSUES.

School Section	No. 3	No. 5	No. 6	No 8
By-law	No. 236	No. 318	No. 398	No. 441
Amount of Loan	$400.00	$550.00	$300.00	$180.00
Date of Issue	Aug. 31, 1900	Dec. 15, 1905	Nov. 15, 1909	Aug. 15, 1912
Interest Rate	5½%	5%	6%	6%
Year	Equal annual payments of Principal and Interest.			
1901	$53 07			
1902	53 07			
1903	53 07			
1904	53 07			
1905	53 07			
1906	53 07	$71 34		
1907	53 07	71 34		
1908	53 07	71 34		
1909	53 07	71 34		
1910	53 07	71 34	$71 40	
1911		71 34	71 40	
1912		71 34	71 40	
1913		71 34	71 40	$24 57
1914		71 34	71 40	24 57
1915		71 34		24 57
1916				24 57
1917				24 57
1918				24 57
1919				24 57
1920				24 57
1921				24 57
1922				24 57

STAIR BUILDING, TORONTO, ONT., Dec. 31, 1918.

To the Reeve and Council, Township of Cardiff, Ontario.

GENTLEMEN,—Subsequent to the mailing of the report in which it was endeavoured to have in your hands before the close of the year, the County Treasurer has submitted statements of arrears of taxes returned to him.

It would appear that these were fyled some time after the 20th of July, 1918, and the previous returns made to the County Treasurer, copy of which is contained in the report, has been amended by these later returns.

Copies of returns made from 1911 to 1917 are attached hereto. In the case of the year 1917 all tax arrears as contained in the Collector's Reconciliation have been returned and they appear on a separate sheet.

In the case of the returns for the years 1911 to 1916 these appear in total and it does not show the separate amounts for each of the several years returned.

Summary of the arrears per Roll as shown on the Collector's settlement statements for the years 1911-1916 amount to $1,379.96. Returns made amount to $1,270.41, leaving a balance not returned of $109.55.

Year		Arrears per Roll
1911		$158 31
1912		260 42
1913		155 29
1914		234 48
1915		183 61
1916		387 85
		$1,379 96
Returned to County Treasurer:		
For 1911-1916, per sheet	$494 45	
For 1911-1916, per sheet	775 96	
		1,270 41
Not returned		$109 55

Whoever made up these returns to the County Treasurer would, no doubt, have a list on which is contained the tax arrears by years and if this sheet is contrasted with the arrears as shown on the separate statements, the differences can be noted and dealt with by the Council.

The Treasurer is apparently not fully conversant with the returns made to the county, and our former report must be taken in conjunction with the foregoing.

Statement of the transactions with the County is appended. This has been checked and found correct according to the Municipal Cash Book.

Yours faithfully,

HENRY GLOVER,

For Provincial Municipal Auditor.

TOWNSHIP OF CARDIFF.

STATEMENT OF UNPAID TAXES RETURNED TO THE COUNTY TREASURER.

Name of Party Assessed	Con.	Lot	Acres	Total Taxes	Year	Remarks
Wm. Gable	9	15-16	100 -	$65 98	1916	Non-resident.
			100	.....	1911 to	
J. C. Mason	7	7 & 8	100-100	38 94	191411916	Non-resident.
Frank Reynolds	1	2 & 3	100-100	11 32	1916	Non-resident.
Robt. Dixon	4	12	100	5 45	1916	Non-resident.
J. B. McWilliams	8	15-16	100-100	31 84	1915-1916	Non-resident.
Edgecombe Pearce	16	2-3	100-100	10 50	1916	Non-resident.
Horace Thomas	16	4	100	6 25	1916	Non-resident.
Amos Toms	15	14-15	87-88	3 01	1916	Non-resident.
Omer Bousgon	16	pt. 11	40	4 31	1916	Non-resident.
Emir Peters Estate	21	pt. 25	2	25 32	1911-1913-1916	Deceased.
Deer Lake Jt. Stock	21	pt. 25	2	18 29	1911 & 1916	Non-resident.
Harvey Neil	23	28	100	8 12	1911 & 1916	Non-resident.
Frank Minns	21	10	100	14 24	1911 & 1916	Deceased.
Chas. Bower	22	pt. 17	86	19 16	1914 & 1916	Non-resident.
Dan Kelly	21	11	100	32 88	1912 to 1916	Non-resident.
Thos. Connaghan	21	3	100	12 83	1912 & 1916	Non-resident.
H. Strudwick	14-15	21-22	72-82	59 18	1911-1912-1913 & 1916	Non-resid'nt.
Abel Gould	6	pt. 31	10	20 94	1911 & 1916	Resident.
J. G. Anderson	6	23-24	75-75	24 55	1912-1913	Resident.
					1916	Resident.
Lauchlin Anderson	6	20	190	97 12	1911 to 1916	Non-resident.
Irvin Hilker	1	24	100	9 56	1916	Resident.
James Donald	1	26-27	40-80	.....	....	
		28	80	14 10	1916	Resident.
John Tinney	1	29-30	80-80	12 42	1916	Resident.
Edward Tinney	1	31	75	20 56	1916	Resident.
Charles Tinney	1	32	100	56 79	1911-1916	Non-resident.
James Wilson	2	32	100	57 53	1911-1916	Non-resident.
Geo. Edwards	6	32	100	12 23	1916	Non-resident.
Enoch Hunter	5	25	150	12 23	1916	Resident.
W. H. Lake	11	31-32	90-90	56 31	1912 & 1916	Resident.
John Boomhour	10-11	S. Pt 28	70-70			
		28		14 00	1916	Resident.
				$775 96		

TOWNSHIP OF CARDIFF.

Statement of Unpaid Taxes Returned to the County Treasurer.

Name of Party Assessed	Con.	Lot	Acres	Total Taxes	Year	Remarks
Manly Boomhour	10 & 11	27	80	.....	.....	
	pt. 28 N.		80	$20 75	1911 & 1916	Non-resident.
James Wheeler	22	5-6	60	.....	1911, 1912, 1913	Non-resident.
			60	70 46	1914, 1916	Non-resident.
James Scott	19-20	6-6	100	.....	....	
			100	41 54	1913-1916	Non-resident.
Robert Elliott	20	3	100	7 07	1916	Non-resident.
Leo Connahan	20	4-5	100	.....	....	
			100	12 72	1916	Non-resident.
R. J. Howlett	21	pt. 3	50	.....	1913, 1914	
			100	22 24	1916	Non-resident.
John Reynolds	10	17	....	17 63	1911-1915	Non-resident.
Geo. A. Chraysler	19	16	100	4 73	1911	No chattels.
Elizabeth Bowen	22	17	80	13 11	1911-1912	Deceased.
Manson Townsend	22	S. pt. 19	120	11 21	1911-1912-1913	Resident.
Nicholas Tripp	21	8	100	2 94	1911	Resident.
James Vance	10	21	120	10 00	1911	Non-resident.
A. G. Schofield	22	3	100	16 77	1911-1912	Non-resident.
William Dennis	20	3	100	34 16	1911-1913-1914-1915	Non-resident
Mandy Connaghan	22	4	200	26 10	1911-1912-1913	Resident.
Robert Drury	18	pt. 21-22	100	20 53	1912 & 1914	Resident.
William Hogan	18	19	100	7 97	1912	Resident.
Thomas Covert	22	24-25	150	.....	....	
			150	1 11	1912	Resident.
Joseph Godfrey	22	W. ½ 19	50	12 47	1912-1913	Resident.
John Cannaghan	21	7	100	7 70	1912	Resident.
William Millan	19-20	9-10	100	.....	....	
			100	11 81	1912	Resident.
Rev. Jos. Watson			100	.....	....	
Nathan Creighton	10	29-30	100	29 87	1911-1912	Resident.
Michael Paradis	21	5	100	10 14	1912	Non-resident.
John Watson	4	13	100	1 21	1913	Non-resident.
James Ritchie	13	17-18	100	.....	....	
			100	9 12	1913	Non-resident.
Stanley Bowen	18	15	100	7 29	1913 & 1914	Non-resident.
Geo. A. Evans	19-17	20-22	100	.....	....	
			100	10 75	1913	Non-resident.
Bert Agott	20	pt. 25	1	2 63	1913	Resident.
Archie Scott	21	10	100	3 03	1914	Non-resident.

TOWNSHIP OF CARDIFF.

Statement of Unpaid Taxes Returned to the County Treasurer.

Roll No.	Name of Party Assessed.	Con.	Lot	Acres	Total Taxes	Year	Remarks
	William Bowers	* 20	6	100	13 75 *	1913	Resident.
	Emory Peters	20	23-24-25	40-40-40	18 93	1914	Resident.
	James Mooney	7	13-14	100-100	5 05	1913	Non-resident.
					$494 45		
102	Robert Dixon	4	12	100	$6 31	1917	Non-resident.
160	William Gable	9	15-16	200	14 43	1917	Non-resident.
97	W. J. Kidd	5	12	100	9 79	1917	Not available.
156	Jas. Patterson	5-6-4	14-14-14	260	13 76	1917	Non-resident.
158	J. C. Mason	7	7-8	200	16 11	1917	Non-resident.
159	Frank Reynolds	1	2-3	300	15 26	1917	Non-resident.
143	Edgcombe Pearce	16	2-3	200	11 16	1917	Non-resident.
144	Horace Thorne	16	4	100	7 49	1917	Non-resident.
77	Eli Clarke	12-13	15-15-16	225	10 61	1917	Non-resident.
146	John Reynolds	10	17	100	9 53	1917	Non-resident.
170	Amon Bouxaggne	16	N. pt. 11	40	5 38	1917	Non-resident.
176	Mercy Peters	20	pt. 25	30	6 54	1917	Deceased.
65	Amos Thoms	15	14-15	175	11 97	1917	Non-resident.
139	Charles Bowen	22	17	86	7 07	1917	Non-resident.
136	Dan Kelley	21	11	100	8 59	1917	Non-resident.
133	Frank Minns	21	10	100	5 59	1917	Deceased.
36	Farnk Minns	22	18	145	6 35	1917	Deceased.
131	Manson Townsend	22	19	120	8 85	1917	Not available.
162	Geo. Edwards	6	32	132	12 66	1917	Non-resident.
106	Enoch Hunter	5	26	150	12 32	1917	Not available.
161	Jas. Wilson	2	32	100	12 66	1917	Non-resident.
118	Geo. Creighton	9	31	100	7 69	1917	Non-resident.
22	Leo Connaghan	20	4-5	200	14 63	1917	Soldier in France.
30	Robert Elliott	20	13	100	10 65	1917	Non-resident.
58	Jas. Scott	19-20	6-6	200	16 77	1917	Non-resident.
29	Jas. Wheeler	22	pt. 5-6	120	15 25	1917	Non-resident.
					$277 42		

* Notified, Oct. 22nd, 1918, that this is an error.

TOWNSHIP OF CARDIFF.

In Account with Provisional County of Haliburton.

1911.

Jan. 1	Balance due	$424 19	
	Levy	226 35	
July 29	Cash		$367 25
Dec. 28	Non-resident taxes		56 94
			$424 19
	Balance		226 35
		$650 54	$650 54

1912.

Jan. 11	Balance due	$226 35	
	Levy	275 34	
Dec. 3	Cash		$200 00
	Balance		301 69
		$501 69	$501 69

1913.

Jan. 1	Balance due	$301 69	
	Levy	212 07	
Dec. 19	Cash		$60 38
" 24	Cash		250 00
	Balance		203 38
		$513 76	$513 76

1914

Jan. 1	Balance due	$203 38	
	Levy	213 81	
	Balance		$417 19
		$417 19	$417 19

1915

Jan. 1	Balance due	$417 19	
	Levy	275 75	
March 29	Cash		$125 00
April 16	Cash		88 81
Aug. 12	Cash		100 00
Dec. 22	Cash		60 00
			$373 81
	Balance		319 13
		$692 94	$692 94

1916.

Jan. 1	Balance due	$319 13	
	Levy	329 65	
Feb. 16	Cash		$100 00
Dec. 7	Cash		120 00
" 28	Cash		160 00
			$380 00
	Balance		268 78
		$648 78	$648 78

1917.

Jan. 1	Balance due	$268 78	
	Levy	386 01	
July 21	Cash		$100 00
Dec. 27	Cash		200 00
" 29	Cash		100 00
			$400 00
	Balance		254 79
		$654 79	$654 79

1918

Jan. 1	Balance due	$254 79	
	Levy	536 14	
July 13	Cash		$100 00
	Balance		690 93
		$790 93	$790 93

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Ontario. Legislature Assembly.
Sessional papers.
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Maps to accompany
Sessional Paper No. 4, 1918.

PROVINCE of ONTARIO

Hon. G.H. Ferguson, *Minister* — Willet G. Miller, *Provincial Geologist*

GILBERTSON
HEBA
DUNMORE
ARGYLE
HOLMES
MATACHEWAN INDIAN RESERVE
BADEN
ALMA
POWELL
CAIRO
YARROW
KIMBERLEY
WEST BRANCH MONTREAL RIVER
EAST BRANCH MONTREAL RIVER
Fort Matachewan
Matachewan Lake
Baptiste Lake
Browning Lake
Twin Lake
Bear Lake
Third Lake
Alma Lake
Gamey Lake
Beaver Lake
Burnt Lake
Mud Lake
Duck Lake
Hunt Lake
Stull Lake
Sesekinika Lake
Obushkong Lake
Obushkong Creek
Sesekinika Lake Creek
Upper Sesekinika Lake
Sesekinika Lake Outpost
Sesekinika Lake Outpost Creek
Sesekinika Lake Outpost Creek
Sesekinika Lake Outpost Creek

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